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ABSTRACT

This directory contains comprehensive descriptions of diagnostic-prescriptive reading programs for which some success has been demonstrated in the classroom as shown by statistical evidence of significant improvement in student learning. The programs chosen do not constitute all the diagnostic-prescriptive reading programs available nor were all such programs considered for inclusion. The program descriptions offer information related to program rationale, materials, classroom organization, inservice training, cost, evaluation data on student achievement, and, where possible, the location of New Jersey school districts using the program. The table of contents lists the programs by title and relates each to specific grade levels. In all, 24 programs are described. (TO)

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Reading Programs That Work
A National Survey

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Introduction

In an effort to respond to the needs of New Jersey school districts, the Office of Program Development of the New Jersey State Department of Education has funded an E.S.E.A. Title III project entitled Project TAP (Technical Assistance Program). This directory is one of the products of Project TAP. It contains comprehensive descriptions of diagnostic-prescriptive reading programs for which some success has been demonstrated in the classroom as shown by statistical evidence of significant improvement of student learning. These descriptions provide basic program information essential to prudent decision making. It is the hope of the Office of Program Development that teachers and administrators will avail themselves of this document when making developmental and operational decisions related to their needs in reading instruction.

The reader should take note that the programs chosen to appear in this directory do *not* constitute all the diagnostic-prescriptive reading programs available to schools; nor should the reader assume that all diagnostic-prescriptive reading programs were considered for inclusion. In order to initially identify programs, the authors used such comprehensive sources as the *Right to Read Programs*, International Reading Association, American Institute of Research, Title I and Title III. In addition to the aforementioned sources, individuals regarded as reading education experts were contacted to provide further insight about existing programs and projects that might be considered for inclusion. In the final analysis, 500 programs were initially considered for inclusion. The final decision as to which programs would appear in the directory was based on available evaluation data that indicated that the programs had demonstrated a positive impact in the classroom.

The use of this directory is but one step in a total decision making process. The table of contents is so designed as to provide the reader with easy identification of programs related to specific grade levels. The descriptions offer information related to program rationale, materials, classroom organization, in-service training, cost, evaluation data on student achievement and, where possible, the location of New Jersey school districts using the program. In addition to the directory, the project staff accumulated sample materials for each program. These materials have been disseminated to the N.J. Educational Improvement Centers—Northwest and South. It is suggested that administrators and teachers contact the EIC for their district if they are interested in previewing materials related to the programs. It is hoped that the combination of using this directory, previewing sample materials, and acquiring appropriate technical assistance will result in school districts implementing programs that best meet the needs of their students.

Acknowledgements

The task of locating and reviewing reading programs is largely a matter of bringing together the expertise of a wide array of knowledgeable professionals, and presenting it in a unified format. This report, therefore, owes a very great debt to more people than could be listed here. Throughout this project we have found educational specialists at all levels very willing to share their particular knowledge and to spend considerable time in furthering the process of dissemination. To all, named and unnamed, go our very sincere thanks.

Perhaps the most difficult task involved in the project was the initial choice of programs for review. This task would have been impossible without the cooperation of those familiar with exemplary programs nationwide. Within the U.S. Department of Health, Education, and Welfare we would particularly wish to thank Dr. Helen MacArthur of Title I, Ms. Linda Levy of the National Institute of Education, and Mr. Tom Keyes of the Right to Read Program. Ms. Grace Fivass and Ms. Carmen Finely of the Pittsburgh and Palo Alto offices of the American Institutes of Research were particularly helpful in making available the results of earlier evaluations. Dr. Stephen P. Klein of the UCLA Center for the Study of Education provided very useful information. Dr. Evelyn Ogden and Dr. James Swalm of the New Jersey State Department of Education shared their thorough familiarity with programs within the State of New Jersey.

The review of each program required the cooperation of the district personnel and bookmen familiar with the program. Materials were gathered and mailed and questions were answered. Most of these very helpful people are listed as contacts for the individual programs. Our special thanks go to Mrs. Nancy Simbola of Project Instruct, Mr. James Margolis of Cross-Age Teaching, and Dr. Alan Pratt of New Dimensions in Education, Inc., and by mentioning these few we wish to thank the many.

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Alpha One

Summary

Alpha One is a program designed to teach first grade children to read and write sentences containing words up to three syllables in length and to develop within the child a sense of his own success and fun in learning to read. It is a unique program in several ways including the fact that it is backed with a money-back guarantee. The publisher will refund all costs of materials to a district which is dissatisfied with the program after using it for three years. Alpha One is principally a decoding program. It seeks to capitalize on the child's sense of fun and fantasy by employing a variety of game-like situations to teach decoding skills. Games, stories, filmstrips, and a puppet theatre revolve around 26 delightful Letter People. A recently added kindergarten program called Alpha Time now introduces the Letter People as 30-inch inflatable dolls called the Huggables. Evaluation studies on Alpha One indicate that the money-back guarantee is a statement of justified confidence.

Nature of Program

For whom is the program designed?

Alpha One is designed for children in the first and second years of school.

On what rationale was the program designed?

Alpha One approaches beginning reading and language arts by emphasizing word mastery through phonics. The program helps the child overcome his initial fear of the written word by providing game-like situations where he learns almost simultaneously. The lessons are games, stories, rhymes and humorous experiences. The aim is to make the learning experience so much fun that the child's first efforts are happy and successful. Underneath the fun is a carefully structured program which presents the material in an organized sequence.

What are the general goals and objectives of the program?

The main objective is to give each child so many happy and successful experiences with letters and words that he will have the courage and confidence to attack any word.

Organization and Materials

How is the program organized?

The program is organized around a set of Letter People, each with a distinctive personality. The Letter People and the children interact in many activities aimed at teaching the content of the program. These activities are fully described in the *Professional Guide* which presents detailed lesson plans for each lesson. The program is divided into three major divisions. Part One introduces the individual letters, Part Two teaches decoding and spelling skills, and Part Three teaches procedures for decoding polysyllabic words.

What specific objectives are involved?

The specific objectives of Alpha One are in the form of specific skills taught in each of the three parts.

Part One introduces letters and teaches:

Recognition of the letter shape and sound
Oral reproduction of the letter sound
Written reproduction of the letter symbol
Association of the written symbol with the sound
Recognition of the written symbol in isolation and in words
Reading and spelling regular one-syllable words having a short vowel
Introduction of blends and special letter combinations

Part Two focuses on specific decoding and spelling skills related to:

Division of vowels and consonants
Introduction of long vowels
Differentiation of long and short vowel sounds
Words that end with a long vowel sound
Silent e
Adjacent vowels
Control of vowels
Suffix ing
Special sounds: sh, ch, th, wh
Irregular sight words ("runaways")
Distinction between c and K
Y as a consonant and a vowel
Soft c and g
Special vowel sounds: ou, oi, oo, au.

Part Three completes the program by providing the child with a strategy for reading words of two and three syllables.

How much student time is devoted to the program?

The program is designed for daily use totaling an hour or so, if the childrens' interest is maintained. Each lesson can be presented in shorter portions in the mornings and afternoons.

What materials are provided?

All materials are stored in an Alphawagon, mounted on wheels. They include:

The *Professional Guide* contains detailed lesson places describing the objectives, materials, motivation, lesson development, summary exercises, tests, etc., of each lesson.

Chatterbooks for each child present poems, reading passages, and related seatwork.

Letter Meeting Greeting Packets are greeting cards to each child from each Letter Person used to introduce the Letter People.

The *Letter People* are replicas of the unique set of characters used throughout the program. In Alpha One, these are placards, but inflatable 30-inch dolls are available in the Kindergarten program Alpha Time.

Story Pictures are illustrations with corresponding poems and stories which are used for motivation, review, and remediation

The *Chatter Album* is a long-playing record which uses stories to teach sounds.
In addition, the materials include an individual chalkboard for each child, two puppets, duplicating masters of assessment exercises, and a filmstrip.

How open is the program to supplementary and teacher-made materials?

The program is open to additional materials although they should be used in conjunction with the lessons presented in the Guide.

What student assessment materials are provided?

Each lesson culminates in a "Let's Make Sure" activity which tests the skill taught in the lesson. These activities are provided on duplicating masters so that the activity can be taken home.

Classroom Activities

How are classrooms organized?

Alpha One is intended for use in the typical first grade classroom with up to 35 pupils. No entry skills are assumed by the program. Instruction is teacher-directed, following the flexible grouping assignments common in the first grade.

How are the materials used?

Alpha One is a set of highly structured, sequenced lessons which make strong appeal to the first-graders' sense of fantasy and fun. Lessons consist of rhymes, stories, humorous experiences, games, puppetry, and the like. The alphabet is introduced to the children letter-by-letter with much excitement and fanfare as Letter People. Each Letter Person is a unique character with intriguing attributes associated with his name. Mr. F has funny feet, Mr. H gets his sound from his horrible hair, and Miss I suffers from an itch (consonants are male and vowels female).

After all Letter People are introduced, the Story Pictures are used to depict the Letter People in action. Through these stories and associated activities, various phonic principles are taught. Games are used to reinforce the child's use of these principles in reading and spelling words. One such game, called "Prove It," is played in many contexts. A child may ask the Letter Person Mr. M for permission to get a drink. Mr. M will give permission only if the child can name a word he is in. The child names a word and then must prove it by saying "Man, man, munching mouth." Each Letter Person has a bag filled with objects and the names of objects which use his sound. These bags become the source of many games and activities.

Gradually, through the carefully planned and sequenced games, the principles of phonic word attack skills are taught. Special phonetic signs are used to diagnose words. Each letter that makes a sound is placed in a "clue box", and combinations of letters sounded together are put in a "squash box." There are also "belonging boxes," "one-sound-ending boxes," "all-belonging boxes," "protection signs" and many additional "Alpharisms." Irregular words which violate signs are called "runaway words", and are surrounded by rings with running feet. It is the activities of the Letter People in accommodating themselves to the various boxes and situations which are the subjects of the stories, plays, and poems.

No special reading books are used with the program. The children are encouraged to read anything which interests them regardless of difficulty level. Considerable reinforcement for reading is built into the program materials themselves. At the beginning of the year, all poems, stories, directions, etc., must be read to the children, but gradually the children are able to read them for themselves. The last three tests in the "Let's Make Sure" series involves reading paragraphs containing polysyllabic words and answering questions about them.

Are teacher supplements used?

The program does not require paraprofessionals or volunteers. The only audiovisual equipment specified is a filmstrip projector and record player, but other equipment would be useful for supplemental activities.

How is student progress assessed?

Student progress and understanding is assessed constantly as part of the games. Children write on and hold up their chalkboards in some of the activities. On the back cover of the *Chatterbook* are two circles, one yellow and one purple. In many activities, children are told to hold up a particular color if a certain condition exists (e.g., if a certain word begins with a certain sound). Weekly assessment is provided by the *Let's Make Sure* tests which are done as seat work, corrected, and taken home.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

No special facilities are used.

Is special equipment needed or suggested?

No special equipment is needed beyond that furnished by the program.

Is in-service training needed or suggested?

No special in-service training is necessary as long as the teacher follows the prescribed lesson plans.

What provisions are made for special training of teachers?

No special training is provided beyond that in the carefully prepared *Professional Guide*.

What is the cost of implementing the program?

The Alpha One Kit which contains all materials necessary for a class of 35 costs $295 initially and has an expected usefulness of three years with replacement of consumables amounting to about $75 a year. The per pupil cost over a three-year period, therefore, averages about $5, depending on class size and other factors. These costs will be refunded by the publisher if the using school or district is dissatisfied with the program.

Program Development and Status

How was the program developed?

The program was originally developed by two classroom teachers in Nanuet, New York and attracted considerable attention for its fun-filled environment and apparent success. The program was one of ten selected by the American Institute of Research after formal evaluations for the Model Programs in Compensatory Education series.

What is the present status of the program?

Alpha One is produced and marketed commercially by New Dimensions in Education, Inc. It has recently been extended downward with the development of a Kindergarten program based on the same Letter People called Alpha Time. The company is currently developing television programs using the concepts of the program.

Program Evaluation

How has the program been evaluated?

Alpha One was evaluated formally for its effectiveness with disadvantaged children in 1969-70. The program was used with one first-grade classroom at PS 115 in New York City and results

were compared against a control classroom using the school's regular materials. At the end of the year, the Alpha One group had median scores of 2.8 (comprehension) and 3.1(vocabulary) on the *Gates MacGinitic Reading Test*, while the control group scored 1.9 and 2.1 respectively. The norm for the testing date was 1.8. A follow-up study made a year later showed that all Alpha One pupils still available for testing were reading at the fourth-grade level in mid-second grade. PS 115 is located in a racially mixed inner city neighborhood with a largely Spanish-speaking population. In this experiment, both Alpha One and control materials were used during three 40-minute periods daily.

In the Nanuet, N.Y. school in which the materials were originally developed, all first grade classrooms use the program. Recent test results using the *Gates MacGinitic Reading Tost* show the median scores for all first grades to be 2.7 (comprehension) and 3.0 (vocabulary). Eighty-five percent of the children are on or above grade level, and only 2 percent are as much as five months below grade level in comprehension. Similarly impressive results have been reported for other schools. In one school the program was used with a first grade class composed of children who had shown very little success with the school's basal program. Many of these children did not know the letter names and almost half were repeating first grade. Following a year's instruction with Alpha One, 13 of the 25 children were reading at or above grade level for children completing second grade on the Metropolitan Achievement Test. Teachers and principals involved with the program attest to the program's ability to generate unusually good attitudes toward reading.

What are the indicated strengths and limitations of the program?

Alpha One gives every indication of being an unusually strong program in accomplishing its objectives of teaching children phonic word skills while building positive attitudes toward reading, self, and school.

Useful Information

Where can the program be obtained?

Alpha One, and its companion program, Alpha Time, are available through:

Dr. Alan Pratt
New Dimensions in Education, Inc.
131 Jericho Turnpike
Jericho, New York 11753
(516) 757-6507

References

National Center for Education Communication. *PS 115 Alpha One Reading Program, New York, New York.* Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, 1972. (OE 72-79).

Reiss, Elayne, and Rita Friedman. *Professional Guide, Alpha One: Breaking the Code.* Plainview, N.Y.: New Dimensions in Education, 1969.

Reiss, Elayne, and Rita Friedman. *Alpha Time, Professional Guide.* Plainview, N.Y. New Dimensions in Education, 1972.

Cooperative Individualized Reading Project

Summary

CIRP is a program that facilitates the flexible use of varied materials in the diagnostic-prescriptive teaching of decoding and structural analysis skills involved in basic reading in grades K-3. Included in the program are diagnostic and record-keeping components, and handbooks which provide detailed and comprehensive listings by skill of the commercial materials available from 59 publishers. In addition, the program has the teacher retraining component necessary to the complex nature of the individualized teaching task.

Nature of Program

For whom is the program designed?

CIRP materials and training are designed for teachers of basic reading in grades K-3. While the materials were developed and evaluated in suburban schools of Connecticut, the processes of concern are those fundamental to reading for all children. The CIRP materials function to enable teachers to effectively and flexibly individualize instruction for all children at the beginning stages of learning to read.

On what rationale was the program designed?

The program approaches reading through taxonomies of decoding and structural analysis skills. It is strongly committed to flexibly individualized instruction. It opposes equally the basal or programmed approaches where all children study the same materials, and stylized individualization based on unguided self-selection and myriads of work sheets. Rather, it assigns the central role in the process to a teacher who is trained and equipped to function in the multiple roles required for individualizing instruction.

The program conceptualizes individualization as a continuous three-stage process: 1) the assessment of strengths and needs of the individual child, 2) the selection of appropriate materials, and 3) the effective implementation of a variety of techniques. In assessing the child, several considerations beyond pace and skill needs are important: the personal interest of the child, preferences for types of materials such as worksheets, games, machines, and so on. Such a broad view of individualization is unworkable unless the classroom teacher has available a management system providing diagnostic instruments, record keeping, information about materials of instruction, and support personnel. In most cases, the teacher will require inservice training in the use of the system.

What are the general goals and objectives of the program?

CIRP states its general goals as follows:

1. To retrain teachers to act as
Diagnosticians of instructional needs
Monitors of instructional growth
Instructors of individuals and groups
Facilitators of the learning environment
Resource persons to teachers, paraprofessionals, volunteers and cross-age tutors.

2. To retrain teachers to utilize information about student's learning styles, interests, aptitudes, and achievements for selecting techniques and materials.

3. To support teachers in creating a total classroom environment that encourages the child's personal, physical, and social development as well as his academic achievement.

4. To increase teacher knowledge and understanding of a wide variety of materials by providing descriptive information about specific skills, publishers, media, levels of difficulty, and the involvement required by students and teachers.

Organization and Materials

How is the program organized?

The program is implemented through a retraining workshop operated through the auspices of the University of Bridgeport. At this workshop teachers are taught the strategies employed by the program and are familiarized with the management materials. These materials include the diagnostic tools and record keeping materials for decoding and structural analysis, the materials retrieval handbooks, and an idea book. It is suggested that teachers completing the workshop should train other teachers and aides within the school.

What specific objectives are involved?

CIRP visualizes the learning-to-read process as primarily one of mastery of the clusters of skills involved in decoding and structural analysis. Specifically, these categories include the following:

Decoding Kills
Auditory Discrimination
Rhyming
Consonants (Single and Double)
Vowels (Long and Short)

Sound/Symbol Correspondences
Consonants
Single Consonants
Digraphs
Blends (Double and Triple)
Silent Letters
Soft and Hard C and G
Vowels
Short Vowels
Long Vowels (1 and 2-Letter Spellings, Final E)
Special Vowel Sounds
Consonant Control Vowels

Structural Analysis Skills

Compound Words
Contractions
Prefixes
Suffixes
Common Roots
Rules for Structural Change
Syllabication Skills

These broad categories are broken down into smaller units for diagnosis and prescription. For the decoding skills, both decoding and encoding processes are included, and the structural skills include both analysis and synthesis where appropriate.

How much student time is devoted to the program?

The program does not specify the amount of student time involved.

What materials are provided for the student?

The program does not specify or provide instructional materials per se. In keeping with its philosophy of flexibility and teacher-direction, the materials retrieval handbooks catalogue and index on a lesson-by-lesson basis commercial materials (all media) from 59 publishers.

What materials are provided for the teacher?

In keeping with its philosophy and goals, the major components of CIRPlare materials provided for teachers to facilitate the task of individualizing instruction. These materials are as follows:

CIRP Diagnostic Tools for Decoding and Structural Analysis. This packet of short tests is used in assessing skill development of individual students, and includes provisions for record keeping. The tests are organized according to the skills listed above, and are correlated with the other materials.

CIRP Materials Retrieval Handbooks for Decoding Skills and Structural Analysis. The materials retrieval handbooks are designed to help teachers locate specific materials needed to meet the instructional needs of individuals or groups. The handbooks are comprehensive both in the amount of materials covered and in the detail with which the materials are indexed. In addition to identification information (complete to page number and filmstrip frame), all entries include information concerning the instructional element or elements involved, the level of difficulty, the medium or combination of media employed, whether the material is teacher-directed, self-checking or programmed, the purpose of the lesson (introduction, reinforcement, review or testing), and other pertinent comments.

In addition to the description common to both handbooks, the *Decoding Handbook* provides the following information:

1. Position of the element within words used.
2. Mode of presentation (visual, auditory, tactile).
3. Whether pictures constitute an essential part of the lesson.
4. The actions required of the child (trace, write).
5. The element by which the child indicates his response (word, letter, vowel).
6. Whether a "recall" level of memory is required.
7. Whether the lesson includes a fundamental phonics concept, clearly written in simple language on the child's portion of the page.

Similarly detailed information relevant to structural analysis is included in the handbook. Both handbooks include appendices of teacher-training and reference components. Also included is a listing of all materials which have been indexed with the names and addresses of publishers included.

CIRP Teacher Ideabook. The *Ideabook* is a loose-leaf book intended as an expandable resource on classroom management strategies and ideas for learning activities. Included are directories for constructing materials and equipment and suggestions for the use of space, material and human resources. Optional record keeping forms and procedures for the use of the other components are suggested.

In order to compress the comprehensive information concerning materials into a usable space, it was necessary to employ a coding system. Considerable training and experience with the codes is necessary before they can be used effectively.

Once mastered, however, the codes provide an extremely concise description of materials available for teaching each of the specific skills.

How open is the program to supplementary and teacher-made materials?

The program is open to any use a teacher chooses to make of it. The codes provided could be easily applied to additional teacher-made materials, and catalogued with commercial materials. The program encourages the sharing of successful materials and techniques between teachers.

What student assessment materials are provided or suggested?

The student assessment materials provided consist of packets of short, informal tests of the various skills listed. While the descriptive literature claims that these tests allow the teacher to identify "precisely" the skills not mastered, the test booklets specifically disclaim such precision in favor of more modest statements. The tests are not technically written nor are they long enough for any confidence in their reliability. Viewed as informal inventories of skills, they would be useful to instruction. Nothing prevents the use of additional standardized tests for program evaluation and other purposes.

Classroom Activities

How are classrooms organized?

CIRP materials are designed to be useful with any classroom organization. It is suggested that due to the additional burdens of record keeping and individualization of instruction some form of teacher assistance is mandatory, and suggestions are made to this end.

How are materials used?

The developers of CIRP believe strongly in the uniqueness of each teacher-pupil interaction, and have stressed flexibility of use in the construction of the program. The *Ideabook* discusses a variety of ways in which materials can be used. Instruction may be individualized by pupil, or small groups concerned with the same skill may form the basis of instruction. In any case, instruction follows the pattern of diagnosing needed skills and selecting materials and procedures to teach this skill with due consideration of the "learning style" preferences of the students involved.

Are teacher supplements used?

The program requires the services of the one full-time teacher and one part-time aide in each classroom. The aide might be a paid para-professional, volunteer parent, or crossage tutor.

How is student progress assessed?

There are no provisions in the program for the assessment of student progress beyond the informal diagnostic tests. These tests are intended to be used in small segments throughout the year as a basis for both instruction and assessment. The tests are not arranged in any order of difficulty, however, nor are norms or multiple forms provided.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The *Ideabook* discusses many special facilities and suggests methods of construction. None of these are required by the program, however.

Sample Entries From Materials Retrieval Handbook: Decoding*

Pos	Seq	Medium	Use	Title, page, purpose, (comments)	Pres	Response	Ident. No.	
I/short I/ (cont.)								
Learning Systems, Primary Reading-69								
M	15-25	cassette & worksheet	tdr3	Kit 2049 Level C, p. 1, intr (p. 1-4)	AP	i:p, w w:i	LS1C49-	S 1
M	15-25	cassette & worksheet	tdr3	Kit 2050 Level C, p. 1 (p. 1-4, includes scrambled words)	AP	w:w s:w (R)	LS1C50-	S 1
Lippincott, Basic Rdg-63-65								
I	10	tchrs man	tdr1	PP, p. 8, intr (a & e included for contrast, through p. 10A)	ATP	i:l, w s:w w:i	LP1A01-	3 T 8X
I	10	workbook	tdr1	Wkbk PP, p. 10, intr	P	s:w w:i	LP1W01-	10
Lippincott, Lippincott's Basic Rdg-68								
I	10	workbook	tdr1	Wkbk A, p. 10, intr	P	w:i	LP3W01-	10
I	10-13C	workbook	tdr2	Codebook A, p. 6, intr	P	i:l, p	LP3W14-	6 T 4
I	10-13C	workbook	tdr1	Codebook A, p. 8	A	w:i	LP3W14-	8 T 6
M	25	tchrs man	tdr1	2-2, p. 3, rev (continues p. 4A)	q	i:w s:w	LP3A06-	1 T 3BX
Lippincott, Begin To Read, Write & Listen-71								
M	10-17	workbook	tdr2	Letterbook 8, p. 1, intr cut & paste activity)	P	i:p	LP4W08-	1
Lyons & Carnahan, Phonics We Use-66-68								
M	20-25	workbook	tdr2	Book C, p. 56, intr	P	w:i	LY1W03-	56
M	20-25	workbook	tdr2	Book C, p. 57	P	i:p	LY1W03-	57
M	30-35	workbook	trd2	Book D, p. 34		w:w	LY1W04-	34
Lyons & Carnahan, The New Phonics We Use-72								
I	10	workbook	tdr1	Book A, p. 29	AP	t:l	LY3W01-	29
I	13	workbook	tdr1	Book B, p. 85	P	t:l	LY3W02-	85
I	13	workbook	tdr1	Book B, p. 86	P	w:i	LY3W02-	86
I	15	workbook	tdr2	Book B, p. 87	P	i:p	LY3W02-	87
Lyons & Carnahan, Young America-72								
M	10	tchrs man	tdr1	Little Pig L2, p. 93, intr (vowels listed & defined; also riddle game)	A	i:l, s s:w	LY4A02-	28 T 93X
M	13	workbook	tdr2	Skillbook L5, p. 60, intr	(C) P	i:p t:l	LY4W05-	60
M	15	workbook	tdr2	Skillbook L6, p. 14, rev	P	i:p t:w	LY4W06-	14
Macmillan Spectrum-64-35								
M	40-60C	workbook	s-ch	Word Analysis L2 Orange Bk, p. 35	P	w:i, w	MC1W02-	35
M	40-60C	workbook	s-ch	Word Analysis L2 Orange Bk, p. 54	P	w:w	MC1W02-	54
Milton Bradley, Vowel Sounds-70								
M	10-25	cassette & worksheet	s-ch	Vowels I, p. 1, intr	ATP	i:p w:i	MB1C03-	S 1
M	10-25	cassette & worksheet	s-ch	Vowels I, p. 2	ATP	i:p w:i	MB1C03-	S 1

For explanation of line format, please refer to the CIRP *Description of Products*, pages 2 and 3

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Sample Entries From Materials Retrieval Handbook: Structural Analysis*

SEQ	Medium	Use	Title, page, purpose, (comments)	Elements	Process	Ident. No.	
Derivational Suffixes: Lessons For 2 Or More							
Bobbe Merrill, Dev Rdg Text Wkbk Series-69							
60	workbook	tdr3	SHOOTING STARS GR6, p. 80C	ary ion ity ment	synthesis	BM1W08-	80C
Continental Press, Phonics & Word Analysis Skills							
35	worksheet	tdr3	GR 3-2, p. 17	less ment ness	cntxt appl	CN3S06-	17
35	worksheet	tdr3	GR 3-2, p. 08	able tion ure	classif	CN3S06-	18
40	worksheet	tdr3	GR 4-1, p. 20	ful ous	synthesis cntxt appl	CN3S07-	20
40	worksheet	tdr3	GR 4-1, p. 26	able ible	analysis synthesis cntxt appl	CN3S07-	26
45	worksheet	tdr3	GR 4-2, p. 3	less ment ness	analysis synthesis cntxt appl	CN3S08-	3
55	worksheet	tdr3	GR 5-2, p. 18	ence ion ment tion	synthesis cntxt appl	CN3S10-	18
55	worksheet	tdr3	GR 5-2, p. 19	able al ible ous	synthesis cntxt appl	CN3S10-	19
Daniel Reardon, Basic Phonics Prog-70							
30	workbook	tdr2	3RD GRADE PHONICS WKBK, p. 74	able ment	(M) synthesis cntxt appl	DR1W03-	74
Follett, Spelling & Writing Patterns-71							
50	workbook	tdr1	BOOK F, p. 42C, intr (dropping final e)	ion tion	analysis	FL2W05-	42C
Follett, World of Language-71							
20	basal tchrs man	tdr1	BOOK 2, p. 22, t. 26F, intr (poem)	able ness	(M) synthesis cntxt appl	FL3A02-	22 T 26FX
30	basal	tdr1	BOOK 3, p. 174A, t. 127B, intr (deals with geographical origins i.e. texan, new jerseyite, etc.)	an er ite	synthesis	FL3A03-	174A T 127B
40	basal	tdr2	BOOK 4, p. 108A, t. 65, intr (deals with origin of place names i.e. westport, newport)	5+	synthesis	FL3A04-	108A T 65C
Ginn, Rdg 360-69							
30	basal tchrs man	tdr1	WITH SKIES & WINGS L9, p. 32, t. 66, intr	sion tion	analysis	GN2A09-	32 T 66 X
30	workbook	tdr3	WITH SKIES & WINGS L9, p. 65A	ful less	(M) synthesis	GN2W09-	65A
30	workbook	tdr3	WITH SKIES & WINGS L9, p. 95	ful less	(M) cntxt appl	GN2W09-	95
35	basal tchrs man	tdr3	ALL SORTS OF THINGS L10, t. 328 (use after unit 6)	ness ous	cntxt appl	GN2A10-	T 328 X
35	basal tchrs man	tdr2	ALL SORTS OF THINGS L10, p. 210, t. 248, rev	ful ment	analysis cntx appl	GN2A10-	210 T 248 X
35	basal tchrs man	tdr3	ALL SORTS OF THINGS L10, p. 236, t. 27B, rev	sion tion	cntxt appl	GN2A10-	236 T 273BX
40	basal tchrs man	tdr1	THE SUN THAT WARMS L11, t. 92A, rev (chgng Y to I, dbling fin con, drppng final e, use after unit 1)	5+	(M) cntxt appl	GN2A11-	T 92AX
40	basal tchrs man	tdr3	THE SUN THAT WARMS L11, t. 93, test (chgng Y to I, drpping final e, use after unit 1)	5+	analysis synthesis cntxt appl classif	GN2A11-	T 93 X

*For explanation of line format, please refer to the CIRP *Description of Products.*

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Is special equipment needed or suggested?

The materials retrieval handbooks index materials which require special equipment, but such materials are not required by the program.

Is in-service training needed or suggested?

CIRP views itself as primarily a teacher retraining program. In-service training is a major component.

What provisions are made for special training of teachers?

The CIRP staff conducts workshops at the University of Bridgeport and other locations. A 5-day workshop is conducted to prepare personnel who will be responsible for training other teachers. Teacher-training workshops also require the equivalent of 5 days before the beginning of a program and the equivalent of an additional 3 to 5 days for sessions during the school year. Under some conditions, CIRP personnel will conduct workshops at a local school system.

What provisions are made for training of teacher-supplements?

One of the emphases of the teacher training program is to aid teachers in training and working with teacher aides. The program does not train teacher supplements directly.

What is the cost of implementing the program?

The program requires a variety of materials and media in each classroom or at some central point. CIRP estimates that the average expenditure per classroom for materials would be about $400. In-service training costs are about $800 for a teacher who is expected to train seven others. In addition, paraprofessional salaries would be a factor where this form of teacher supplement was used. CIRP estimates that the program would cost approximately $69 per pupil annually above regular program costs.

Program Development and Status

CIRP grew out of the Continuous Progress Program in Reading in the schools of Westport, Connecticut. This program was adopted in 1965 due to concern over the fact that although Westport students were reading above grade norms, they were performing at only 75 per cent of their expected ability. The corrective instruction of the continuous progress program succeeded in improving scores at all levels, and it was decided to initiate similar individualized training in the primary grades as the normal method of instruction. The second phase was given the acronym CIRP, and began in four first- and second- grade classrooms in 1970-71.

What is the present status of the program?

Although undergoing some revision, CIRP materials and procedures are complete for grades K-3 and will be available commercially through the General Learning Corporation during the 1973-74 academic year. The commercial version will be named PRO Reading. A second project, called Project RELATE, has been initiated to develop a similar program for use in the upper elementary and secondary grades.

Program Evaluation

How has the program been evaluated?

Since CIRP was developed through Title III funds, evaluation has been a consistent component. The program was developed in close cooperation with classroom teachers, and constant feedback from users was a factor in the development. Formal evaluation of the results obtained in the Westport schools showed project classes consistently outperforming regular classes. Results on the *Gates-MacGinitie Reading Tests* at the beginning of March showed that the projects first grade classes attained mean grade equivalent scores in both vocabulary and comprehension of 3.0, compared to 2.5 and 2.4 respectively attained by the regular Westport classes and the national norms of 1.9. The second grade students in regular and project classes attained equal means of 4.1 in vocabulary. In comprehension, project second grades averaged scores of 4.3 against 3.7 for the regular second grades (second grade national norms are 2.7).

What are the indicated strengths and limitations of the program?

CIRP has received much recognition for the quality of its program. It was selected as a model program by the National Center for Educational Communication, as the recipient for one of twelve Pacesetter Awards to Title III projects by the President's Advisory Council on Supplementary Centers and Services, and as one of eight projects chosen for nationwide dissemination by the National Institute of Education. The state of Connecticut provided funding for districts wishing CIRP. CIRP cannot be an answer to all educational problems, of course. The system is complex and places a great deal of trust in the teacher's ability to use the program effectively. It requires that a variety of materials be available to each teacher if the program is to have any purpose. The retrieval handbooks at present suffer from undue complexity since no teacher will have access to all the materials catalogued. Alternative ways of arranging listings are currently being explored by the staff. The diagnostic instruments are technically inadequate, and can hardly furnish the precise information implied by the term "diagnosis," but this is endemic in the field. They are no doubt useful as informal classroom devices which save the teachers the work of devising their own.

As a program of individualization, CIRP offers extreme flexibility and freedom to the teacher in determining instruction. It would be a useful adjunct to the strong teacher, but would not offer the support to the weak teacher that more structured programs offer.

Useful Information

Where can the program be obtained?

For additional information concerning the program, contact:

Mr. Joseph J. Lipp, Project Director
Cooperative Individualized Reading Project
Room 11 South Hall
University of Bridgeport
Bridgeport, Connecticut 06602
(203) 384-0711

For information concerning the commercial version PRO-Reading, contact:
Dr. William F. Furlong
Director of Reading Services
General Learning Corporation
2139 Wisconsin Avenue, N.W.
Washington, D.C. 20007
(202) 333-0500

References

"*Description of Products.*" Bridgeport, Conn.: Cooperative Individualized Reading Project, undated. (Mimeographed.)

"*CIRP, The Learning Environment for Children: A Position Paper.*" Bridgeport, Conn.: Cooperative Individualized Reading Project, undated. (Mimeographed.)

"*CIRP, The Learning Environment for Teachers. A Position Paper.*" Bridgeport, Conn.: Cooperative Individualized Reading Project, undated. (Mimeographed.)

"*Materials Retrieval Handbook: Decoding.*" Bridgeport, Conn.: Cooperative Individualized Reading Project, undated. (Mimeographed.)

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Criterion Reading Instruction Project

Summary

Criterion Reading Instruction is a pre-reading and beginning reading program devised and developed around the individual needs of children. The "test-teach-test" method employed identifies individual student needs in a hierarchy of skills. The project teachers developed teaching strategies to help each child learn. The Linden Title I staff has identified some 140 skills which form the Linden Criterion Checklist and a variety of procedures for teaching these skills to young children. The program supplements regular classroom activities.

Nature of the Program

For whom is the program designed?

The program is for children in Kindergarten through grade three.

On what rationale was the program designed?

Teachers use the "test-teach-test" method to identify individual needs and teach to these needs. The program was initially based on a hierarchy of skills developed by the staff and test results on the skills. As the teachers found additional areas to be necessary, the initial hierarchy of skills was expanded to include them.

What are the general goals and objectives of the program?

The goals of the program evolved as the program developed. The program teachers developed criteria measures stated in behavioral terms for the skills measured on initial tests. Other skills with appropriate criteria measures were added as their need became apparent. Activities appropriate to each skill, and a system for monitoring student mastery were developed. The initial skills hierarchy was only a starting point. As the staff worked with the children, they broadened the hierarchy to match pupil needs and refined the skill listings.

Organization and Materials

How is the program organized?

Children go to a specially equipped room. Instruction is geared to the individual children's demonstrated needs. Activities are arranged in open classroom fashion. The children work in small groups or in individualized instruction.

What specific objectives are involved?

All teaching is based on needs assessment. Areas of assessment include sensorimotor skills, visual-auditory skills, visual language skills, language thinking skills, listening skills, auditory memory, phonology, structural analysis, and comprehension skills. Specific sensorimotor skills include "tapping a rhythm," "matching shapes," and "matching colors." Examples of visual-auditory skills are "identifying sounds of people," and "identifying sounds of animals." Visual language skills include "understanding the concept of together or attached," and "understanding the concept of fat and skinny." Specific program performance objectives have been set up in the nine broad skill areas to assess the effectiveness of the program at each grade level.

How much student time is devoted to the program?

Children were scheduled for the project three to five times a week.

What materials are provided for the student?

The Random House Criterion Reading program forms one element of the program. Skills taught in this phase have been modified considerably as a result of working with the children. The Peabody Language Development Kits are another source of activities. In addition, phonics kits, instructional games, workbooks, teacher made cassettes, film strips, cartridge films, phonograph records, flash cards and other manipulative materials are provided.

What materials are provided for the teacher?

Teachers are provided with the criterion skill lists. They use any of a wide range of materials to teach specific skills. The Title I staff is coding the materials to specific skills so that appropriate materials can be easily located.

How open is the program to supplementary and teacher made materials?

The program encourages teachers to use a variety of approaches leading to mastery of specific skills. The entire program is the result of teacher innovation in activities.

What student assessment materials are provided or suggested?

Initial and final assessments are made on the basis of the ABC Inventory, a readiness test, and the Harrison-Stroud Reading Readiness Profiles.

Classroom Activities

How are classrooms organized?

Classrooms are arranged around a number of learning centers in open classroom fashion. The team approach has been instituted in schools where there were two or more teachers. Learning centers are set up within class to teach or reinforce the skills which the assessment identified. Groups of two to four students are rotated from center to center as they complete assigned activities. Specialists as well as teachers are involved in the teaching activities.

How are the materials used?

The materials are used as the teacher directs. A great variety of games and manipulative materials are available. In some classrooms, teaching tends to be informal. Other teachers operating in similar settings are more formal in their approach.

Are teacher supplements used?

Teacher supplements may be used to duplicate materials, maintain the classroom inventory of equipment and instructional supplies, and record test scores.

How is student progress assessed?

Initially skill needs are analyzed on the basis of 2 tests, the *ABC Inventory* and the *Harrison-Stroud Reading Readiness Profiles*. In addition, teachers test appropriate levels of the criterion skills checklist. In this way, the teacher knows which skills the child has mastered and which he is ready to undertake. When the child shows that he has mastered the skill, the teacher records his progress.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

A separate room for the teaching activities is needed. Materials must be conveniently stored.

Is special equipment needed or suggested?

Project equipment includes a Language Master, a Controlled Reader, an 8 mm Technicolor Projector, a Primary Typewriter, Cassette and Tape Recorders, a 16 mm Sound projector, and a Singer Studymate II.

Is in-service training needed or suggested?

In-service training is helpful.

What provisions are made for special training of teachers?

None are available to districts.

What provisions are made for training of teacher-supplements?

None are available to districts.

What is the cost of implementing the program?

The initial allocation for 1971-72 was $107,923. The cost per pupil was $490. Per pupil cost in 1972-73 was approximately $420. About $5,000 of this total is budgeted for supplies and equipment, or $22.73 per pupil.

Program Development and Status

How was the program developed?

The aim of the program was to reduce the number of children falling one or more years below grade level in the regular school program. The initial emphasis in making this change was focused on readiness and pre-reading levels. With a sufficiently firm and deep background of skills it was believed that the disadvantaged child would be able to advance with steady progress through the reading curriculum.

What is the present status of the program?

The program has been extended to include grades two and three. The skills curriculum is continually refined and new skills and areas added when they are appropriate.

Program Evaluation

How has the program been evaluated?

The 1971-72 program had 3 performance objectives. These were:

1) After seven months participation in the ESEA Title I program, Kindergarten students will demonstrate an average gain of seven months in reading readiness as measured by the *ABC Inventory*.

2) After seven months participation in the program, 80 per cent of the first grade students will demonstrate the cognitive skills required to gain one or more levels for readiness as measured by the *Harrison-Stroud Reading Readiness Profiles*.

3) After seven months participation in the ESEA Title I program, 66 per cent of the first grade students will demonstrate the cognitive skills required to score at the 60th percentile or above on individual subtests of the *Harrison-Stroud Reading Readiness Profiles*.

The results show an average gain of 14 months on the *ABC Inventory* (performance objective 1). Of the 103 first grade students who took the post-test, 92 per cent gained one or more levels on the *Harrison-Stroud Reading Readiness Profiles* (performance objective 2). The percentage of children at or above the 60th percentile on each subtest of the Harrison-Stroud were: Using Symbols 79%, Visual Discrimination 91%, Auditory Discrimination 81%, Context Auditory Subtest 75%. Children did not achieve at expected proficiency level in Visual Discrimination, 64%, and in Using Context, 33%. (The criteria was 66% in performance objective 3.) Nearly all of the performance objectives were achieved.

What are the indicated strengths and weaknesses of the program?

The Title I staff started with an assessment and built a program on criterion measures suited to the local school children. They adopted more skill measures when it appeared appropriate, and broadened the curriculum in the light of new insights. In addition, the Title I staff devised means to help children learn the prescribed skills. The evaluation indicates that the program has been successful.

Useful Information

Where can the program be obtained?

Information concerning the program may be obtained from:

Miss Anita Schmidt
(201) 486-2530
Mr. Lawrence Kinsella
(201) 862-5818
Office of the Superintendent
16 West Elizabeth Avenue
Linden, New Jersey 07036

Cross-Age Teaching

Summary

Cross-age teaching employs older children to help younger children with their learning problems on a one-to-one tutorial basis. In the Ontario, California program, for example, eighth-grade students are transported three times weekly to elementary schools to work with children in grades 4 through 6. Prior to cross-age interaction, the "olders" receive a three-week training session in which they are oriented to the purpose and techniques of the program and review the content of instruction. During the year, content training sessions begin each week, and feedback sessions are held each Friday. Evaluation of the program showed the program to be effective for both "olders" and "youngers" in five of six academic areas (including reading) as well as in such areas as self-concept, social acceptability, and attendance.

Nature of the Program

For whom is the program designed?

The program can be used with all students grades K through 12, including the mentally gifted, retarded, bilingual, etc.

On what rationale was the program designed?

The major rationale of the program emphasizes the special benefits obtained from individualized instruction, and the positive reinforcement available from personal encouragement offered by peers. Individual problems are often lost in a large class situation, and the immediate assistance of a personal friend is not always available. When the available helping friend is perhaps two to four years older, the working relationship can be easier and less threatening than similar help offered by an adult. The program seeks to capitalize on the modeling behavior of younger children, and on the intrinsic reward for the "olders" of being a helpful person.

What are the general goals and objectives of the program?

The general goal of Cross-Age Teaching is that both "olders" and "youngers" will gain from the experience in academic achievement, social acceptance, self-confidence, and adjustment to school.

Organization and Materials

How is the program organized?

The program can be organized in a variety of ways to meet the particular needs of the adopting school district. The basis of organization is simply a group of trained "olders" who work with "youngers" who are two to five years below the age of the "olders." The program takes advantage of the modeling behavior of children. Grade K-3 children model themselves on grade 4-6 students, grade 4-6 students on junior high students, and junior high students on senior high students. The "youngers" work with "olders" from the model group. The "olders" are usually volunteers who elect to participate in the program. In junior and senior high school, the "olders" may be given elective credit for their participation. Some possible examples of organization patterns are presented below as Figure 1. A flow chart of activities involved in setting up the program is included as Figure 2.

What specific objectives are involved?

Cross-Age Teaching is not necessarily objective-bound. As a program designed to supplement normal reading instruction, it could be utilized with any set of objectives.

How much student time is devoted to the program?

While the amount of time devoted to the program is adaptable, a common pattern is for secondary students to spend one period (45 to 60 minutes) a day and for elementary students to spend 30 to 45 minutes a day in program sessions.

What materials are provided for the students?

The "olders" develop their own lesson during the content periods held weekly. They are provided with raw materials and can use the "younger's" regular materials.

What materials are provided for the teacher?

The Ontario-Montclair School District has developed some materials useful in setting up and maintaining the program. Most important is the *Cross-Age Teaching Resource Manual* available with allied materials and training tapes.

Is the program open to supplementary and teacher-made materials?

Any materials can be incorporated into the program.

What student assessment materials are provided or suggested?

There are no student assessment materials specific to this program. The "olders" do not formally assess the "younger's" achievement, but do have the opportunity of discussing their appraisals with the "receiving teacher" at a regularly scheduled conference.

Classroom Activities

How is the teaching organized?

Each "older" teaches three days a week for 30-45 minutes daily. The lesson is conducted according to a lesson plan which must contain three learning activities. The plans are worked out with the help of a teacher-clinician during the content sessions and are coordinated with the "receiving teacher" who is the regular teacher of the "younger."

How are the materials used?

The "older" uses a non-teaching day to prepare his working materials. The materials used are any which are appropriate in a

one-to-one tutorial setting.

Are teacher supplements required?

The "older" is a teacher supplement. While machines, games, etc., would be useful to the program, none is required.

How is the student progress assessed?

Student assessment on a continuous basis is left to the classroom teachers involved. Assessment for program evaluation utilizes several sources of data discussed below.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

No special facilities are required beyond the classroom and library space necessary for the program. Some additional transportation is necessary if multiple schools are involved.

Is special equipment needed or suggested?

No special equipment is required. Experience has shown a TVR unit to be particularly valuable in process evaluation sessions.

Is inservice training needed or suggested?

Inservice training is useful in establishing the program.

What provisions are made for special training of teachers?

The original Cross-Age Teaching Project became an Incentive Grant Project for dissemination during 1971-1973. The project has developed one- and two-day workshops and some materials useful to districts beginning Cross-Age Teaching programs.

What is the initial cost of implementing the program?

Implementation costs are minimal. The joint experience of 623 schools in programs involving 61,793 students showed a total cost of $119,037 or $1.93 per child.

Program Development and Status

How was the program developed?

The program was developed over a three-year period by the Cross-Age Teaching Staff of Serrano Jr. High School and Margarita and Moreno Elementary Schools in the Ontario-

Figure 1

Possible Organizational Patterns for Cross-Age Teaching

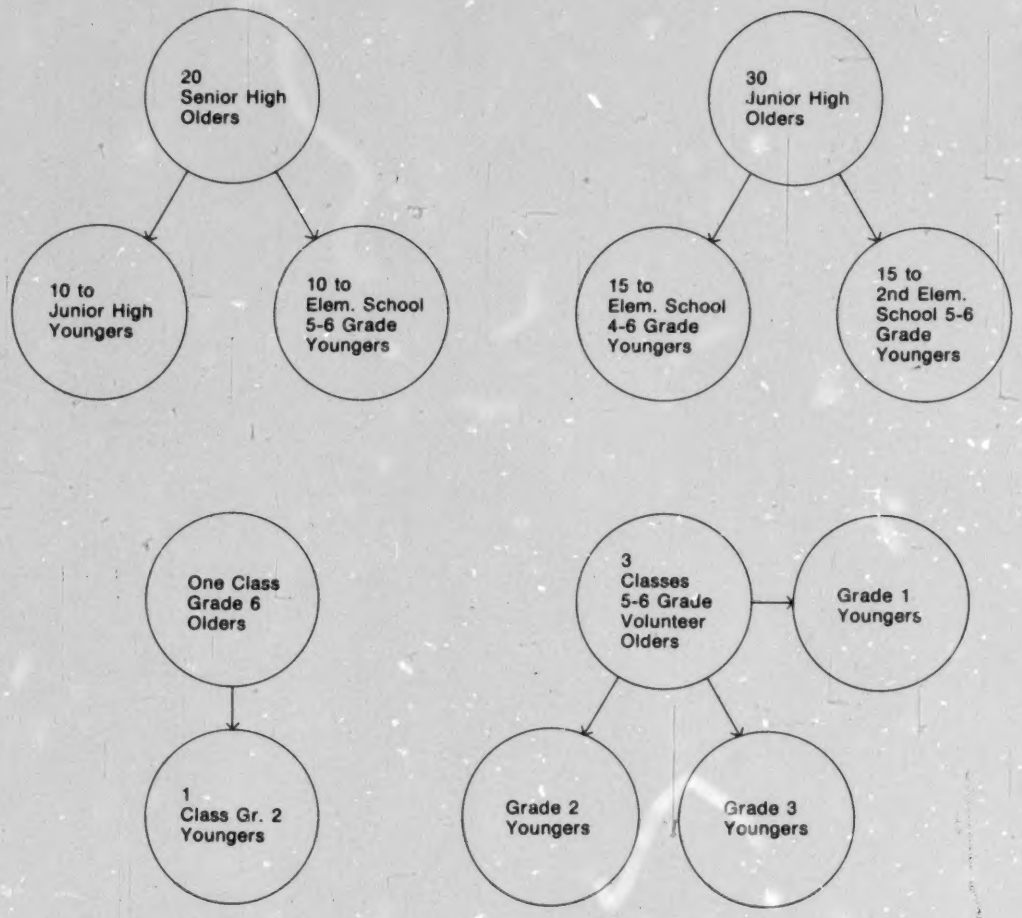
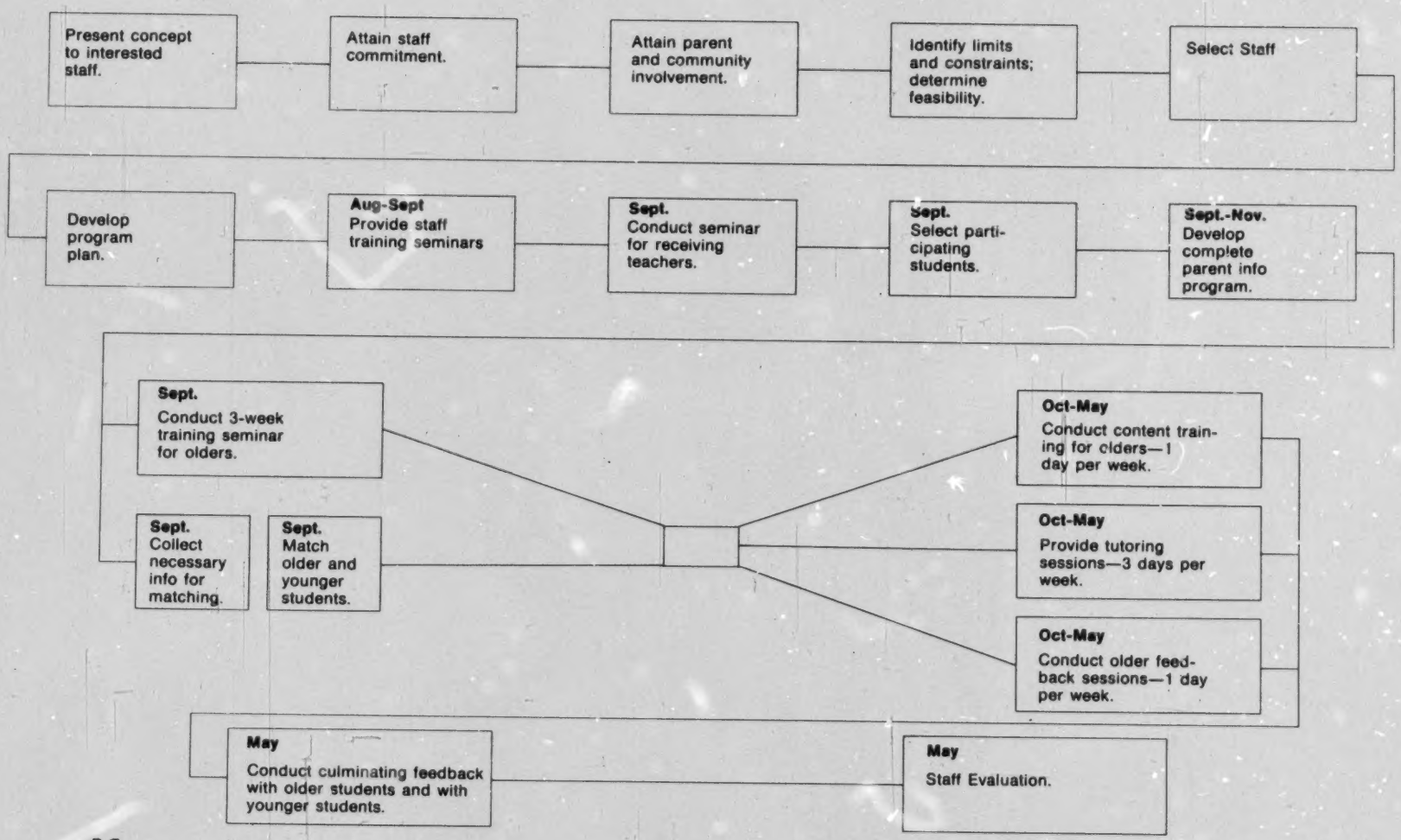


Figure 2

Sequential Flow Chart of Program Activities



Montclair School District in California. Dr. Peggy Lippitt of the Institute for Social Research, University of Michigan made important contributions. Over the past two years, the program has attracted wide interest, and has been adopted by 623 schools with aid from the originating district. It has received several awards including the National Pacesetter Award of the President's Advisory Council and the Certificate of Merit from the Associate Commissioner of Elementary and Secondary Education.

What is the present status of the program?

The program is no longer funded under ESEA Title III. Beginning in September, 1973, the program will be absorbed by La Verne College, Field Studies Division.

Program Evaluation

How has the program been evaluated?

The original program was evaluated by an outside team of evaluators. In this program, eighth grade "olders" worked with fourth, fifth, and sixth grade "youngers." Evaluation was concerned with the categories of academic learning, self-concept, social acceptability, discipline, and attendance. Baseline pretest data was collected in October, and post-testing was done in May. Tests used included the *California Achievement Tests, McDaniel Inferred and Self-Concept Scales*, and sociograms. In addition, data were collected on attendance and discipline patterns. The performance of "olders" and "youngers" were compared to appropriate control groups.

Both "youngers" and "olders" exceeded the performance of controls on five of the six academic areas measured, and growth exceeded that expected from the norms, although both the "younger" and the "older" groups had lower mean IQ scores than the control groups or the norms. Improved self-concept was manifested, and the improvement as shown by the McDaniel test exceeded that of the control groups. Similar improvement was found on measures of social acceptance, discipline, and attendance. Questionnaires soliciting student, teacher, and parent opinions were positive.

What are the indicated strengths and the limitations of the program?

The program capitalizes on the one-to-one peer relationship between an "older" and "younger." This relationship builds the self-concept of both and can be utilized to motivate students "turned-off" by school. The response from schools implementing the program indicates that Cross-Age Tutoring is a workable solution for individualizing instruction.

Useful Information

Where can the program be obtained?

For information concerning the program, contact:

Mr. David Sherertz
Program Specialist
Field Studies Center
La Verne College
La Verne, California 91750
(714) 593-3511

References

Mainiero, John, *Et al. A Cross-Age Teaching Resource Manual.* Ontario, Calif.: Ontario-Montclair School District, 1971.

National Center for Educational Communication. *Model Programs, Title III—Elementary and Secondary Education Act, Cross-Age Teaching, Ontario, California.* Washington, D.C.: National Institute of Education, U.S. Department of Health, Education, and Welfare, 1973.

Ontario-Montclair School District. "ESEA Title III Cross-Age Teaching Project #6138: Project Summary and Evaluation, 1968-70." Ontario, Calif.: Ontario-Montclair School District, n.d. (Mimeographed.)

Dale Avenue
Urban Early Childhood
Education Project

Summary

The project staff has developed a performance objective curriculum for urban, educationally disadvantaged students. The mean I.Q. of the students who have followed this curriculum for three to three and one-half years has been raised from 82 to 100. These students also score at grade level in reading and mathematics on the Stanford Achievement Test. The curriculum has been developed and tested in the Dale Avenue School which is an ESEA, Title I school in Paterson. The school's approximately 600 students are 63% Black, 19% White, 17% non-English speaking, and 1% Oriental. Students enter the school in Pre-Kindergarten for a five year program which takes them through the third grade.

Educationally disadvantaged students typically come to school without the basic skills, especially in standard English, that produce academic success. As a result they normally fall significantly below grade level in reading and mathematics, and usually have frustrating experiences in other subjects as well. Using the performance objective curriculum, teachers at the Dale Avenue School have reversed the typical failure pattern. The development of this program began in 1969-70 and was carried out through a Title III grant from 1970-71 through 1972-73.

The Dale Avenue curriculum is a series of performance objectives, sequentially ordered, in listening, naming, observing, speaking, perceptual motor skills, writing and motor skills, classification, mathematics, decoding, and seriation. The project and teaching staff develop lessons to teach the skills and tests to assess skill mastery. Students are taught one skill in each area simultaneously. They begin learning a new skill in each area only after mastering the previous one. As the students move from one grade to the next, their skill mastery record moves with them. Teachers therefore can maintain the continuity of the curriculum's developmental sequence. The performance objective curriculum is appropriate for skill development through the end of the third grade.

The Decoding-Encoding skills form the basis of the reading program. They are taught for 45 minutes each morning to homogeneous groups of 5 to 15 students. Additional reading instruction takes place as part of the regular classroom program in the afternoon.

Throughout this article, the Performance Objective Curriculum is discussed as a whole. This discussion and the program's evaluation data do not apply to the teaching of any one set of objectives by themselves.

Nature of the Program

For whom was the program designed?

The Dale Avenue project was designed for urban disadvantaged children in pre-school and primary grades.

On what rationale was the program designed?

The Project accepts the premise that culturally disadvantaged children lack early experiences of an educationally stimulating nature. Teaching based on performance objectives and careful assessment of student growth are basic to the Dale Avenue program. Parent involvement in the activities of the children and the school is also a vital part of the program.

What are the general goals and objectives of the program?

The goal of the performance objective curriculum is to bring the average academic performance including I.Q. of urban, educationally disadvantaged children up to the national norm and maintain this gain for three years.

Over 400 teaching objectives are outlined in the Performance Objective Record developed for Pre-Kindergarten through Third level. Progress in each of 10 major areas is assessed by pre-test followed by teaching and post-test.

Organization and Materials

How is the program organized?

Teaching objectives fall into 10 major areas: Listening, Naming, Speaking, Observation, Writing and Motor Skills, Perceptual Motor Skills, Math, Decoding/Encoding, Classification and Seriation. Individual records keep track of each child's progress. Approaches to the Decoding/Encoding objectives vary according to each child's abilities and teacher preferences.

What specific objectives are involved?

Thirty-four objectives of increasing difficulty are included in the Listening Category. For Example L-24 reads, "After thirty second pause, can repeat in exact sequence four digits that have been given at the rate of two per second." L-34 reads, "When told a scrambled version of a familiar story, can rearrange the story in proper sequence."
The number of objectives in each category varies from 11 in Seriation, to 163 in Decoding/Encoding.

How much student time is devoted to the program?

The performance objectives are the total school curriculum. Teaching of the Decoding/Encoding performance objectives in levels one through three takes 45 minutes each morning and is carried on in small homogeneous groups. In addition, each student has an afternoon reading period with his regular classroom teacher. A few students receive additional supplementary help.

What materials are provided for the student?

The basic reading materials are the Bank Street Readers, workbooks, supplementary books, reading games, phonics and word attack activities. Many special materials for working with children with particular language and learning difficulties such as parquetry blocks, counters, peg boards, puzzles, toy money, playing cards, crossword puzzles and Peabody Language Kits are available.

What materials are provided for the teacher?

In addition to regular teacher's guides, a resource library provided books to aid teachers in planning their activities. These books include *The Inner City Child, Language Programs for the Disadvantaged, Behavior Modification and Perceptual Activities*, and other resources.

How open is the program to supplementary and teacher made materials?

Each teacher is encouraged to create a program of activities to teach the skills outlined in the performance objectives.

What student assessment materials are provided or suggested?

Upon entering the program in pre-Kindergarten, students are diagnostically tested on the Peabody Picture Vocabulary Test, a Skill Assessment Test, Identity and Body Parts Checklist, and the Performance Objective Record. This testing places the child according to his level of achievement within each category of the Performance Objective Record.
A continuous record of each child's progress on the Performance Objectives accompanies him/her from pre Kindergarten through level three.
The staff has developed pre and post tests for the Performance Objectives. The Performance Objectives themselves also serve as a post-test to measure each student's achievement.

Classroom Activities

How are classrooms organized?

The reading program utilizes the special talents of the Dale Avenue staff in novel ways in dealing with the reading difficulties of some of the children. A combination of teacher evaluation and testing information is used to place each child at Dale Avenue in the first through third levels in a homogeneous reading group. Groups range from 5 to 15 children. These groups are led by a specialist, teacher, or teacher aide for forty-five minutes a day. Children with special needs were placed in reading programs which rely upon the skills of the school specialists in physical education, music, art, home economics and psychology. Children who exhibit perceptual motor problems are placed with the physical education teacher who uses intensive motor training with these children. The art specialist works with children with problems in visual perception. She utilizes basic shapes to form more complicated structures. Cave drawings, signs and newspaper advertisements are part of this program.

A few level three children who are reading on an extremely depressed level are placed with the home economics teacher for reading. The teacher uses items found in the home economics setting as a medium for the establishment of word recognition and sight vocabulary. Classification of foods and objects followed, and these children were able to read simple recipes.

Children who manifest special aptitude for music are in a music and reading group with the music specialist. Word families are built in spelling songs. Word recognition is taught as children learn to read the words in songs.

How are the materials used?

The basal reading materials and a wide variety of supplementary materials are utilized in reading activities, designated by the program teachers.

Are teacher supplements used?

Supplementary teachers (specialists) give help in pre-testing and supplementary teaching. Supplementary areas include psychological help, speech or language, perception, audition, and cognition. Parent tutors and student volunteers also contribute to the program.

How is student progress assessed?

Each student is pre-tested and post-tested on performance objectives according to the sequence of skills outlined in the Performance Objective Record. A check list of progress is kept for each child in each of ten major areas.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

A peaceful and cheerful atmosphere is maintained in the school. No special facilities are required. The testing program has shown that students who attended the school but were not included in the performance objective curriculum (as it was being phased in) were below grade level in all subjects. This occurred despite the modern and beautiful facilities.

Is special equipment needed or suggested?

A variety of manipulative materials are suggested to teach a broad range of skills.

Is in-service training needed or suggested?

Many workshops for teachers, para-professionals and parents provide in-service training. The Dale Avenue Title III staff offers a two day in-service training program for educators from other districts. Four follow-up consultations are also provided. This is adequate training to launch the program in a new site. The materials required to initiate the program are available at cost from the project director.

What provisions are made for special training of teachers?

Workshops cover such areas as use of classroom perceptual training materials, suggestions for developing receptive and expressive language, suggestions for working with children with learning and behavior problems, and the rationale and description of the Dale Avenue testing program. Experts in education contribute to formal workshops, while informal workshops with teachers focus on orientation and teacher contributions.

What provisions are made for training teacher supplements?

Para-professionals received workshop training in the use of Performance Objectives.

What is the cost of implementing the program?

The Performance Objective Record was developed over a four year period from 1969 through 1973. During the years 1970 through 1973 the development was supported by a grant from the New Jersey Elementary and Secondary Education Act (ESEA), Title III program. The major portion of the Title III grant for this project covered the salaries of the developmental staff, including those of two full time testers and the Parent Coordinator.

The cost of replicating the program is basically that of staff training, follow-up supervision, and evaluation. Provision must be made for the continuing help, encouragement, and support of staff.

The Performance Objective Curriculum, information about its evaluation, background information on the project in general, and the project designed tests, including those for the mastery of the performance objective skills, are available at cost from the project staff. The materials required to introduce the program will probably be found in most school districts.

The original developmental staff of the project is now funded by the New Jersey ESEA, Title III program to offer training services and follow-up consultation to New Jersey educators who wish to replicate the program. There is no charge for the services of the project staff.

After the initial start-up investment for staff training, the program's maintenance cost should not require an increase in the current operating expenses of most districts. Some districts may find that the use of the Performance Objective Curriculum will reduce the students' need for remediation. This, in turn, should represent a decrease in operating expenditures.

How was the program developed?

Before an examination of the evaluation designs and results, it is important to know the sequence in which the performance objective curriculum was introduced into the Dale Avenue School. In 1969-70, the performance objectives were used during part of the year in Pre-Kindergarten. In 1970-71, the program was followed in Kindergarten and the first grade, and in the middle of the year was introduced to the second grade. In 1972-73, the program was followed in all grades: Pre-Kindergarten through third. In 1972-73, the students who completed the first and second grades had followed the performance objective curriculum virtually throughout their school careers. The students who finished the third grade, however, had been in the program for only one and one-half years.

The development during the years 1970 through 1973 was supported by grants from the New Jersey ESEA, Title III program.

Readers must also realize that this phase-in schedule and the evaluation results refer to the use of the complete Performance Objective Record, and are not valid for the use of only one part of it such as the Decoding-Encoding Performance Objectives. IIg

and Ames, Piaget, Bereiter and Englemann, Deutsch, Doman, and Gesell were some of the authors who provided source material for the pre-school-Kindergarten Performance Objective Curriculum. In 1971-72 and 1972-73, assessment of needs of second and third level children showed these children lacked skills in many of the areas in which training had been successful for the pre-Kindergarten and Kindergarten children. It was decided to continue the performance objective format through the third level. The result was performance objectives in ten areas applicable through level three.

What is the present status of the program?

Data has been collected, analyzed and interpreted for children from pre-primary through level three. The performance objectives have been refined into a cohesive program of performance skills.

Program Evaluation

How has the program been evaluated?

The 1972-73 evaluation design had three parts. For the first, a random sample of students, thirty each from the first, second, and third grades in the Dale Avenue School, formed the experimental groups. For each grade level there were four control groups: two control groups from educationally disadvantaged populations, and two from educationally advantaged populations. The scores of the experimental and control groups on the Peabody Picture Vocabulary Test were compared for this year, and this year's scores were compared to those for each group for each year of the project's history.

The second part of the evaluation was indepth testing of first, second, and third grade students at the Dale Avenue School. A pre and post test design using a locally developed test (the Performance Objectives) and a standardized test (Stanford Acheivement Test) was followed. A standardized Child Behavior Rating Scale was given at the end of the year to see if behavior of the experimental groups matched achievement and I.Q. scores. The third part of the evaluation program was monitoring the Pre-Kindergarten and Kindergarten students through random sample testing using the Peabody Picture Vocabulary Test, the project developed Skill Assessment Tests, and the Identity and Body Parts Checklists.

The test data indicate that while the Dale Avenue experimental first, second, and third grade groups do not attain I.Q. scores as high as those of the advantaged control groups, they do make significant gains from entrance into Pre-Kindergarten through Kindergarten and then maintain I.Q.'s that are at a national norm through first and second grade. The third level students made significant gains in I.Q., although not as significant as those of the first and second graders, from the time they entered the program through the end of the third grade, but did not reach the national norm. These third grade students have been in the Dale Avenue School since Kindergarten, and had attended a Pre-Kindergarten outside of the Dale Avenue School, but they had not used the performance objective curriculum until the second half of the second grade.

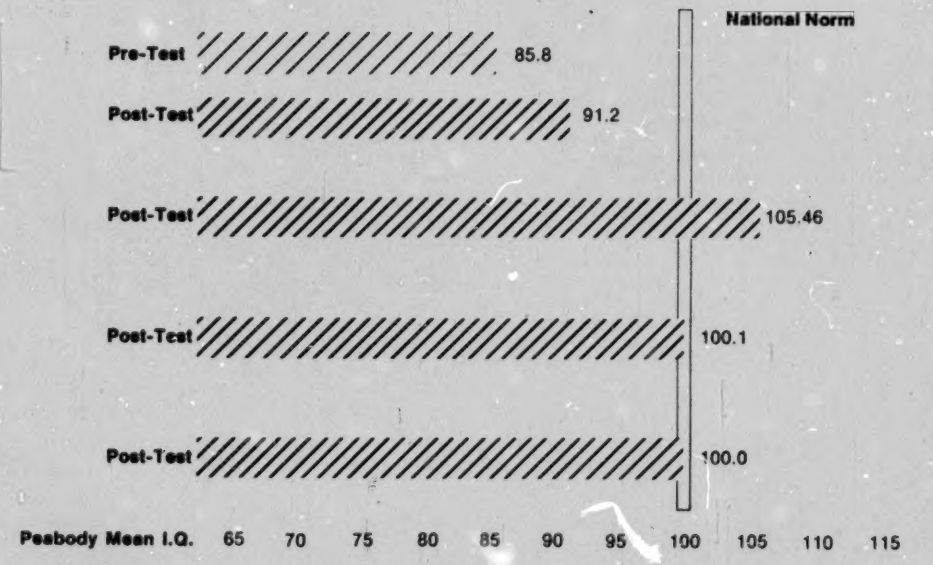
There were significant differences found between all Dale Avenue experimental groups (first, second, and third grades)

I.Q. Scores Measured By The Peabody Picture Vocabulary Test

Four Years Of The Performance Objective Curriculum

The children represented in this graph will complete the third grade at Dale Avenue School in June 1974. They entered Pre-Kindergarten in 1969, well below the national norm in mean I.Q. By the end of Kindergarten, 1971, they were at national norm. They maintained this position through the first and second grades, 1972 and 1973.

Dale Avenue School
Paterson, New Jersey
Dale Avenue Urban Early Childhood Education Project



and the disadvantaged control groups in the same grades. Previous testing had shown that students entering the Dale Avenue School and other ESEA, Title I schools in Paterson for their first year experience (for the Dale Avenue School students this is Pre-Kindergarten while for the others it is Kindergarten) have very depressed I.Q. scores which are well below the national norm and a developmental language age well below chronological age. All groups made significant gains the first year, although the Dale Avenue group did show greater gains. However, the second year of school (Kindergarten for the Dale Avenue School, and first grade for other Title I schools) the Dale Avenue students made additional gains that brought them to the national norm while the other Title I students simply leveled off and made little, if any additional gains. The Dale Avenue first and second grade students maintained these gains and remained at the national norm in I.Q. The other disadvantaged groups remained well below the national norm in I.Q. through first, second, and third grades.

The mean scores for the first, second, and third grade students in the Performance Objectives show gains in the skill areas of listening, naming, speaking, writing and motor skills, classification, mathematics, decoding, and seriation. By the end of the second grade all students were able to perform all of the perceptual motor skills. Although there were very few mean gaps in the first and second grades at Dale Avenue School, there were more in the third grade than in the other grades.

The results of the Stanford Acheivement Tests showed that the first and second grade students were performing at grade level in reading and mathematics, but that the third grade students were performing one year below grade level in reading, and five months below grade level in mathematics.

The behavior rating charts that tested a random sample of the first, second, and third grade students' behavior followed the same pattern as the I.Q. and performance. The first and second grade students were just about at national norms, and the third grade students charted below this level.

The monitoring of the sample of Pre-Kindergarten and Kindergarten students confirmed that the same thing has happened to the school's population year after year since the introduction of the Performance Objective Curriculum. The Pre-Kindergarten students made significant gains in I.Q., skill knowledge (Skill Assessment Test), and knowledge of themselves (Identity and Body Parts Test), They continued making gains in Kindergarten which brought them to the national norm in I.Q., skill knowledge, and knowledge about themselves.

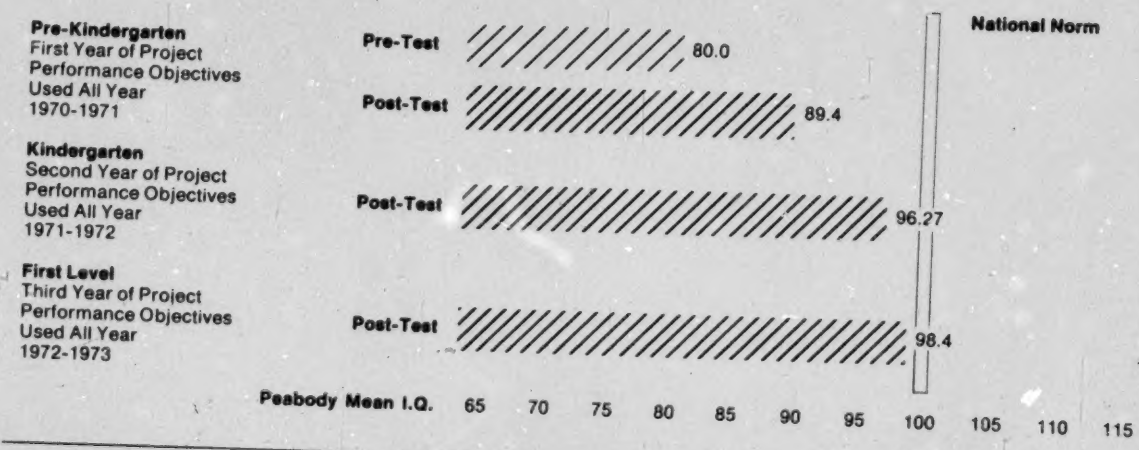
An important point for those interested primarily in reading is the following. One second level teacher in the Dale Avenue

I.Q. Scores Measured by the Peabody Picture Vocabulary Test

Three Years of the Performance Objective Curriculum

The children represented in this graph will complete the third grade at Dale Avenue School in June 1975. They entered Pre-Kindergarten in 1970, well below the national norm in mean I.Q. By the end of Kindergarten, 1972, they were at the national norm. They maintained this gain through the end of the first grade, 1973.

Dale Avenue School
Paterson, New Jersey
Dale Avenue Urban Early Childhood Education Project



School went all the way through the Decoding-Encoding skills with his pupils, but did not spend much time developing the listening, speaking, classification, observing, and seriation skills. His pupils did not score as well in reading on the Stanford tests as did those whose teachers spent time on developing the listening, naming, speaking, observing, classifying and seriating skills. This shows that work in all of the above skills contributes significantly to the development of reading skills.

What are the indicated strengths and weaknesses of the program?

The Dale Avenue program includes assessment of individual children on over 400 performance objectives in 10 broad areas. The reading program capitalizes on the specialized talents of program teachers to teach reading. It makes wide use of teacher resources and the knowledge of educational consultants. It im-

proves the academic performance and capabilities of children from disadvantaged urban evnironments so that they will be able to function at a level equal to that of students from a non-disadvantaged situation.

Useful Information

Where can the program be obtained?

The program has been funded as a demonstration site by the N.J. ESEA Title III program. The staff offers to educators the opportunity to visit the project site, see the program in operation, and receive training in its replication. Materials required for the program are available at cost.

Mrs. Helen Hanson
Project Director
Dale Avenue School
21 Dale Avenue
Paterson, New Jersey
(201) 271-3375

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Diagnostic Reading Clinic Program

Summary

The Diagnostic Reading Clinic serving the public schools of Cleveland, Ohio is exemplary of the clinical approach to reading disabilities suitable to large school districts. The inter-disciplinary staff provides diagnostic and remediation services which are beyond the scope of regular classroom instruction. Children in grades four through seven from some 90 schools are selected through screening for special help. The success of the clinic has led to the establishment of satellite clinics as a method of expanding services. In addition to remediation of selected cases, the clinic furnishes in-service training and consultation to the teachers of the feeder schools, and develops programs for parent involvement.

Nature of Program

For whom is the program designed?

The program is designed to provide services to students in grades four through seven who are recommended by their teachers or principal as having serious reading retardation. Children with serious behavioral problems or low test IQ's are not accepted for remediation. From the students recommended, the clinic accepts those who appear most able to benefit from remediation on the basis of initial diagnostic screening. In the 1969-70 school year, 532 children of the 730 screened were accepted for remediation. Expansion and decentralization of the program allowed successively greater numbers to be accepted in succeeding years: 846 in 1970-71 and 1,515 in 1971-72.

On what rationale was the program designed?

The rationale underlying the clinic assigns to regular classrooms the major responsibility for reading instruction. In any large number of children, however, will be found those requiring more specialized help than can be expected in the classroom. Many of the children in the lowest grades who fall below reading levels may simply require more maturation time in order to catch up with their peers. Children who continue to read below expectancy into the fourth grade and beyond, however, are likely to require special remediation. The complex of causes which can lead to reading disabilities requires an interdisciplinary team approach which can best be brought together in a clinic setting.

What are the general goals and objectives of the program?

The general goals of the clinic are to provide diagnostic and remedial service to children identified as having serious reading disabilities in order that they can exhibit an appropriate level of reading performance in the classroom and on standardized tests, to work with the parents of such children to secure their involvement and support of their children's efforts to master reading, and to provide consultation and feedback to the classroom teachers of the children receiving clinic services.

Organization and Materials

How is the program organized?

The program is organized into satellite clinics to which children are brought in clinic buses, and a follow-up clinicians program which works with the classroom teachers. The program provides correctional reading services, development of study skills, psychological assessment, referral services for health and medical problems, speech and hearing examinations, visual health appraisals, and social work services. The inter-disciplinary staff includes reading clinicians, social workers, a speech therapist, psychologists, a nurse, and teaching assistants, in addition to a support staff of administrators, clerks, and drivers.

What specific objectives are involved?

In working with children, the clinic's objective is to provide the diagnostic and remedial help necessary to bring the children to within one year of their reading expectancy before returning them to their regular classroom. Reading expectancy is calculated by the Bond-Tinker formula which uses IQ as an index of rate of learning.

How much student time is devoted to the program?

On the basis of the initital diagnoses, children are assigned to short-term, moderate-term, or long-term service categories. All children spend one hour daily at the clinic. Those children assigned to long-term service generally attend from four to six months, those in moderate-term programs from three to five months, and the short-term children from two to three months. Children are not told what group they are in, and are returned to their regular classrooms whenever their standardized test results show them to be within one year of their expected level, and when they can perform independently in the use of regular classroom materials at least half of the time.

What materials are provided?

Among the advantages of the centralized clinic is the amount of materials which can be made available. Available to the staff are more than one hundred different items of audiovisual equipment, book collections, reading series, workbooks, dictionaries, reading games and devices, and supportive materials. The list below is a small representative sample; a full list may be obtained from the clinic staff (see *Useful Information*).

Reading Series	*Publisher*
Cracking the Code	Science Research Assoc.
Deep-Sea Adventure Series	Field Educational Publishing Co.
Jim Forest Series	Field Educational Publishing Co.
Morgan Boy Mysteries	Field Educational Publishing Co.
Pacemaker Classics	Fearon
Sounds of Books	Holt, Rinehart and Winston

Workbooks	*Publisher*
Building Reading Skills	Mc-Cormick-Mathers
Eye and Ear Fun Workbook	McGraw-Hill
Ginn Enrichment Workbook	Ginn

Language Experience in Reading	Encyclopedia Britannica
Merrill Linguistic Series	Charles E. Merrill
Phonics is Fun Books	Modern Curriculum Press
Phonics We Use	Lyons and Carnahan
Reading For Concepts	McGraw-Hill
Structured Reading Series	Singer

Audiovisual Equipment	*Manufacturer*
Audiovisual Cards	various
Carousel Slide Projector	various
Controlled Reader	Educational Development Laboratory
Instamatic Projector	various
Language Masters	Bell and Howell
Opaque Projector	various

Audiovisual Equipment	*Manufacturer*
Overhead Projector	various
Record Player	various
Tape Recorder	various

How open is the program to supplementary and teacher-made materials?

The clinical setting is quite open to locally-developed materials. In this particular program, emphasis is placed on "off the shelf" use of a wide variety of commercial materials rather than on clinic-developed materials.

What student assessment materials are provided or suggested?

Each specialist on the clinic staff uses the student assessment materials of his specialty in order to develop a thorough case study of each child. Included are such areas as word recognition, vocabulary, comprehension, oral reading, auditory discrimination, listening skills, visual-motor abilities, academic aptitude, and personal adjustment. The clinic uses the *Gates-McKillop Diagnostic Reading Test* as the basic reading diagnosis instrument and the *Gates-MacGinitic Reading Tests* to determine progress.

Classroom Activities

How are classrooms organized?

Separate classrooms within the clinic are used for remediation sessions. Each classroom normally contains about ten children under the supervision of two clinicians. While each child's program is individually prescribed, the need for children to share reading experiences is recognized, and children are often grouped in small sections with similar problems. These sections typically contained from four to eight children and are flexibly organized. Much of the remediation is on a one-to-one basis.

How are the materials used?

Each child's program is carefully prescribed by the reading clinician on the basis of the diagnostic case study. The prescribed materials and methods reflect the following: 1) a remedial treatment dictated by the instructional needs, 2) a highly organized instructional plan, 3) concern for the child's need to experience success, and 4) articulation with the child's classroom teacher and parents.

A typical hour of instruction is divided into four time periods:

Phase-in. Prior learnings are reviewed or a special activity is used to help the child get ready for the work of the day.

Group Instruction. The child works on specific skills in small group sessions.

Independent Activity. The child works independently with a game, workbook, or other device designed to test and develop independence.

Phase-out. A quick good-by game or activity is used to show, rather than tell, how successful the child has been. Among the games used for this purpose are *Consonant Lotto, End-in-E Game, First Phonics Slide Rule, Group Sounding Game, Phonetic Word Wheel, Syllable Game, Vowel Lotto,* or *Spin-a-Test*.

Are teacher supplements used?

Volunteers from the community assist in the tutorial and small-group work. They are also responsible for supervising the arrival, departure, lunch, and movement of pupils. The clinic has its own staff of drivers responsible for picking-up and delivering the children.

How is student progress assessed?

Student progress assessment is concerned with the change between the child's reading expectancy and his functional reading level. Functional reading level is assessed on a pre-and-post-program basis with the *Gates-MacGinitic Reading Comprehension Test*. The Bond-Tinker procedure for establishing reading expectancy levels uses the formula: years in school x $\frac{\text{IQ Score}}{100}$ + 1.0. In addition to this global criterion measure, the clinical nature of the instruction involves constant assessment of interim progress.

Implementation requirements and provisions

Are special facilities needed or suggested?

Special facilities are needed for a clinic but the extent of these would depend on the scope of the program. Rooms are required for administration, testing, and instruction and for the storage of materials.

Is special equipment needed or suggested?

Special equipment is needed for diagnosis and an extensive array of materials and equipment for instruction is required. While these material costs are large, they are offset in part by the need for multiple purchases of some of the materials for regular classroom use if a clinic were not available. In addition, sufficient vehicles for pupil transportation must be available.

Is in-service training needed or suggested?

Since the major objective of the clinic is to remediate a child's reading disabilities so that he may make normal progress in classroom instruction, there is an important need for articulation between the clinic and the classroom teacher. Where necessary, this articulation includes in-service training elements which aid the teacher in facilitating the child's continuing growth. Such training is specific, concrete, and immediately applicable.

What provisions are used for special training of teachers?

Most articulation with teachers is performed through the Follow-up Clinician Program. Under this program, teachers are visited in their classroom by clinicians who work with them in continuing instruction. In addition, a Teacher Visitation Program makes it possible for teachers to visit the clinic.

A program of in-service meetings is held monthly for classroom teachers. Clinical procedures are demonstrated and discussed, and new instructional techniques for enhancing specific skills are presented by clinic staff and university educators. Other sessions deal with such topics as gaining parent and community involvement.

What is the cost of implementing the program?

The cost of the program, of course, is proportional to the scope of operations. The 1969-70 budget for the Cleveland clinic was $318,550. This amount averaged to slightly less than $600 for each of the 532 pupils treated. In 1971-72, the program had grown to include 1515 pupils at a total cost of $612,526, with

average cost per pupil dropping to slightly less than $400. These amounts are in addition to regular school costs which for the Cleveland public schools amounted to approximately $500 per pupil during this period.

Program Development and Status

How was the program developed?

The clinic was originally established in 1966 through a grant from The Office of Economic Opportunity. Since 1967, it has operated under Title I funding. Each year has seen a substantial increase in numbers of students treated and program effectiveness. In 1971-72, Satellite Centers were opened to decentralize the expansion, and the Follow-Up Clinician program was instituted to increase and regularize articulation with the classroom teacher.

What is the present status of the program?

The clinic and subsidiary programs were in full operation during 1972-73 and will be continued.

Program Evaluation

How has the program been evaluated?

Program evaluation is the responsibility of the Research Division of the Cleveland Public Schools. In addition, however, the clinic has been intensively evaluated by outside evaluators from the American Institute of Research and elsewhere. Evaluation is in terms of reading gains on standardized measures and ratings by teachers and parents.

Consistent with their philosophy, the clinic staff is interested first of all in the percentage of students who attain an "appropriate performance level" (within one year of expected reading grade). Results have varied from year to year ranging from 37 percent in 1970-71 to 60 percent in 1969-70. Significant gains were recorded for most pupils. The average gain made by a random selection of pupils in 1971-72 is shown in Table 1.

Teacher reports rated an overall total of 76 percent as being able to handle classroom materials "always" to "sometimes." Almost 9 percent of the clinic's pupils received final reading marks of "B". 59 percent received "C", 29 percent received "D", and 4 percent received "F". The teachers felt that the greatest impact was in word analysis and completing written assignments. They felt that the clinic exerted a positive influence on pupil confidence, peer rapport, and general attitude toward school.

Table 1

Average Gains Between Reading Performance Levels and Expectancies

Service Group	No. Pupils	Average Gains in G.E. Units (Mos.)	Average Service Period (Mos.)
Long	28	11.57	4.50
Moderate	32	10.63	3.75
Short	5	8.00	2.00
Total		10.07	3.42

What are the indicated strengths and weaknesses of the program?

The results reported above are about typical of results reported from various years, and indicate that the clinic is meeting its goals to a very large extent. Children unquestionably benefit in reading and school performance generally. Several problems are worthy of note, however. A primary problem expressed in teacher interviews concerned the amount of time the clinic session and related travel consume from the normal school day. In some cases, the time missed from class seemed to impede a child's overall academic progress. It was in response to this problem that the satellite clinics were developed, but further decentralization seems desirable.

A second problem centers around the use of the Bond-Tinker Grade Expectancy calculation as a basis for selection and termination. The use of IQ scores in this manner would run counter to the philosophies of some districts. Whether the clinic's philosophy in this regard is objective and realistic, realistic under the constraints of financing, or a tautology which excludes some children from needed help is a decision any district contemplating establishing such a clinic must face.

Useful Information

Where can information concerning the program be obtained?

For information concerning the program, contact:

Dr. Margaret Fleming, Supervisor
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Cleveland Public Schools
1380 East Sixth Street
Cleveland, Ohio 44114
(216) 696-2929

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DISTAR Reading,
DISTAR Instructional System

Summary

DISTAR Reading is a program for children who have not learned basic reading. It is carefully and closely structured, and requires very specific teaching procedures. The skills developed are carefully sequenced. Skill learnings are utilized in building more complex skills. Constant diagnosis of pupil errors and immediate correction techniques to remedy errors are part of the program. An elaborate teacher's script eliminates ambiguity for the teacher. The careful skill structuring and detailed correction techniques eliminate ambiguity for the pupil. DISTAR Reading I teaches letter and phoneme sounds, blending, word reading, letter and word writing, and sentence and paragraph reading. DISTAR Reading II adds specific comprehension skills and question answering techniques to these teachings. DISTAR Reading III, Reading to Learn, concentrates on readings in science and social studies. The pace of DISTAR lessons is fast. The tone of the lessons is one of enthusiasm.

DISTAR Reading I, II is meant for children from pre-school through the primary grades. DISTAR III is for children who have completed DIATAR I, II. Children usually complete each level of the program in a year. Some children will require more than a year, while others will complete a level in less time. Typically, classes using DISTAR employ a teacher and two teacher aides to present the lessons.

The Englemann-Becker approach has been tested with pre-school and primary children. Evaluation studies of pre-school children show significant gains in intelligence after using the DISTAR programs for one year. Studies with first, second and third graders show significant gains in word recognition.

The DISTAR materials are available from Science Research Associates.

Nature of the Program

For whom was the program designed?

The three DISTAR programs form a learning system appropriate for pre-school, Kindergarten, and the primary grades. The system is also applicable for special remedial work with older children and with children who speak English as a second language.

The target population consists of children who have not learned basic reading, language, and arithmetic skills. The original target population—when the first prototype materials were prepared—was pre-school, Kindergarten, and primary grade disadvantaged children. The original scope of the system, however, has broadened so that the target population encompasses *all* children, including the average, the above average, the disadvantaged, children with learning disabilities, and those considered mentally educable or trainable mentally retarded students. The system is not confined to any particular geographic, demographic, or racial-ethnic population.

On what rationale was the program designed?

The DISTAR system has developed from the basic ideas that children learn what they are taught, that the necessary basic skills and concepts are the same for all children, that IQ is a function of teaching, and that it is possible to teach all of these necessary skills and concepts by means of a suitable instructional program. Such a program may be developed by performing a thorough task analysis, logically programming the task components, prescribing teaching routines incorporating correction procedures, emphasizing reinforcement techniques, and incorporating testing as a teaching aid as well as a means of determining what the children have been taught. The system is designed to be presented to small groups, requiring maximum participation of each child, giving the benefits of individual instruction with maximum instantaneous feedback to the teacher. Emphasis is constantly placed upon the idea of success rather than failure.

The authors stress that it is important for every child to develop certain skills and maintain that it is possible for virtually all children to be taught by the DISTAR programs.

The programs, as noted above, are developed on the theory that children learn what they are taught. To teach a child his teachers must determine what he has not been taught; then they must make sure that he is taught every prerequisite skill in a subject before he is introduced to more complex skills in that subject. Believing that learning is the function of teaching, the developers of the DISTAR system present teaching as sequences of properly programmed tasks taught one at a time by specified teaching techniques.

What are the general goals and objectives of the program?

The objectives of the DISTAR Instructional System are to develop the basic concepts and skills in reading, language, and arithmetic which the child needs to be successful in school. These skills include language skills which focus on the language used in the classroom in teaching any of the subjects, rather than social usage language, followed by further development of the skills needed to analyze language and to describe qualities and relationships observed in the surroundings. Reading skills develop those techniques necessary to look at a word, to sound it out, and to say it, followed by development of reading comprehension and advanced reading skills. DISTAR Reading is one of three instructional programs developed by Englemann and his colleagues.

The DISTAR programs have been constructed so that specific educational objectives are stated as a series of specific tasks. The objectives determine how the presentation is to be made and the behavior the teacher must exhibit. Successful accomplishment of the objectives is determined by the feedback of information the teacher receives from the children and by the tests incorporated into the program.

Organization and Materials

How is the program organized?

The DISTAR Instructional System is organized into the Reading I, II and III, Language I, II and III and Arithmetic I, II and III programs. The materials reviewed here include the Reading materials only.

Approximately a year's time is required for a typical group to complete one level of a program; however, some groups of children may move at a faster rate and finish a level sooner (thus moving into the next level), while others may require more than a year to complete a level.

Content organization of levels I and II of the Reading programs can be summarized as follows: Reading I concentrates on the skills necessary to look at a word, to sound it out, and to say it, while Reading II emphasizes comprehension and advanced reading skills and teaches the student to follow directions. Reading III, Reading to Learn, teaches more complex comprehension and study skills, and applies them to readings in Social Studies and Science. Although this review con-

cerns only the DISTAR reading program, it may well be that the success of the instructional system depends on the use of all three programs. All three programs have been used in the evaluation studies reported.

What specific objectives are involved?

At the outset of the program, children are taught through symbol-action games to recognize a sequence of two movements. "When the teacher demonstrates two body movements in sequence, the student is able to demonstrate that he recognized the sequence." This leads to recognition of signals and left to right picture reading.

Children are taught to blend - "say it fast." "When the teacher says a word slowly with pauses between the parts, the student is able to say the word at a normal pace." This technique is first applied to compound words, then to individual syllables and sounds in words. The complexity of the task is increased until the child can hear a word containing six sounds in expanded form, and then "say it fast."

Similar carefully sequenced skills in Reading I and II teach rhyming; spelling by sounds; tracing and writing of letters, words and sentences; associating sounds with printed letters; recognizing upper and lower case letters of the alphabet; naming the letters in alphabetical order—both forward and backward; reading aloud common words that do not have regular spellings; reading aloud words that have a variety of double consonant combinations, inflectional endings and rhyming patterns; reading stories of increasing length; and answering written questions.

How much student time is devoted to the program?

Reading I is sequenced into 159 presentations of approximately 30 minutes each. A variety of activities including related skills - blending, rhyming, symbol reading, practice in sounding, practice in reading sounds, practice in story reading, and worksheets are included in each lesson. Recommended time limits for these activities vary from 3 to 15 minutes. Presentations in Reading II develop new word attack skills and comprehension skills. During Reading II lessons, students work with the teacher for approximately 30 minutes. Seat work with worksheets and writing sheets takes about 25 minutes more.

What materials are provided for the student?

Take-Homes are used for reward and skill reinforcement. They are a part of all presentations in Reading I. Most of the stories in Reading II are divided into two parts. Take-Homes are presented in about two-thirds of the lessons. Students also use worksheets, and writing sheets.

What materials are provided for the teacher?

The Teachers' Kit includes the Related Skills Book, Sounds and Reading Sounds Books A, B and C, and the Recycling Book, as well as colored plastic progress indicators, an acetate page protector, and specialized materials such as decks of colored reading cards, and a teacher's guide.

The teacher's guide applies to Reading I and II. It provides specific teaching information as well as Pronunciation guides, topic index material, and scope and sequence charts. Sound recordings showing pronunciation, and teaching and correction techniques are provided to the teacher. Teacher training materials also include the DISTAR Participant's Manual, and the DISTAR Trainer's Manual.

How open is the program to supplementary and teacher made materials?

Although not required, the teacher may add or develop games to reinforce the skills taught in DISTAR. In addition, DISTAR offers the DISTAR and Strategy Games and the DISTAR Library Series as supplements to the DISTAR programs.

What student assessment materials are provided or suggested?

Approximately 70 tests are included in Reading I. Sixteen tests are included in Reading II. In addition, the daily lessons include provision for continual assessment of individual pupils.

Classroom Activities

Typically, a class of 25-30 children is organized into groups at about the same level of progress. Groups range in size from 4 to 10 children. The lowest performing groups are smallest in size, including perhaps 4 or 5 children. The higher performing groups include up to 10 children. Frequently the teacher and two teacher-aides each conduct DISTAR groups. The three groups are conducted simultaneously in different parts of the classroom. The prescribed teaching method is paced rapidly, and is highly structured. The teaching method requires frequent responses from the child and frequent reinforcement from the teacher.

How are the materials used?

DISTAR lessons are presented in the form of drill from the presentation books. Each child is expected to respond to the teacher's signal and each response is carefully assessed. Responses often take choral form with the children responding in unison. Individual children are corrected as soon as their errors are detected, either during the group activity or following their individual responses. During the last part of the lesson, children work on Take-Homes which they are given to take home when they have successfully completed the lesson. These story-picture-activity sheets are skill reinforcing. In addition, they are tangible rewards for successful completion of the reading lesson.

When necessary, reteaching or modeling of a skill occurs as soon as an error is detected. Absolute mastery is required on the basic skills before the student proceeds. A Recycling Book to be used during Reading II provides refresher teaching of the skills in Reading I.

Are teacher supplements used?

Typically, one or two teacher aides are used in presenting lessons in the DISTAR instructional system. This allows simultaneous presentations to two or three groups at a time.

How is student progress assessed?

Student progress is assessed continually during the daily lessons. Careful correction procedures are part of the DISTAR teaching techniques. In addition, frequent tests are included in the presentation materials to assess mastery before new skills are presented.

Implementation Requirements and Provisions

Are special facilities needed or required?

Movable chairs and spaces where groups can meet are necessary.

Is special equipment needed or suggested?

All equipment and materials for the DISTAR presentations are included in the Teacher's Kit and the packaged student materials. For teacher training, a phonograph is necessary to play the Sound Recordings for Reading I.

Is in-service training needed or suggested?

In-service training is necessary. Teachers must master the DISTAR presentation and correction techniques.

What provisions are made for special training of teachers?

A two-day workshop typically precedes the introduction of DISTAR. Periodic in-service sessions follow in the early months

and throughout the year.

What provisions are made for training teacher supplements?

Teacher supplements are also given the training in presentation techniques.

What is the cost of implementing the program?

	List Price	Net Price
DISTAR Reading I		
Teacher Kit	$ 72.00	$ 54.00
Student Set of 5	44.70	33.50
DISTAR Reading II		
Teacher Kit	108.00	81.00
Student Set of 5	73.00	55.00
	List Price	*Net Price*
Distar Reading III, Reading to Learn		
Teacher Kit (presentation book with level book and teacher's guide)		
Level A	11.35	8.50
Level B	11.35	8.50
Level C	12.35	9.25
Level D	12.35	9.25
Level E	13.00	9.75
Student Materials (cost per child)		
Level A Reader	3.07	2.30
Level B Reader	3.07	2.30
Level C Reader	3.34	2.50
Level D Reader	3.34	2.50
Level E Reader	3.67	2.75
Workbook A	1.34	1.00
Workbook B	1.34	1.00
Workbook C	1.34	1.00
Workbook D	1.34	1.00
Workbook E	1.54	1.15
Supplements		
DISTAR & Strategies Game	2.00	15.00
Cards for Reading	6.70	5.00
DISTAR Library Series (40 books—5 copies each of 8 different books)	61.20	45.90
Per Pupil Cost (based on 30 pupils) Reading I		8.50
Reading II		13.70
Reading III		19.01

Program Development and Status

How was the program developed?

In 1964, Carl Bereiter and Siegfried Englemann began a program for pre-school children from poor homes and non-white ethnic background at the University of Illinois. The program was built on three premises:

a. When we speak of education, we must refer to what children are taught, not what they learn.

b. We must have very specific criteria of performance so that we can analyze what children are to be taught.

c. We must recognize that tasks are the same for all children, but that different children may not have learned the same set of skills involved in a particular task; we must define the role of the teacher as one who teaches every child all the skills a child must master in order to handle a particular task.

Believing that schools must set the same set of educational objectives for all children, the developers began to test the techiques they had devised for teaching "competence skills that potentially lead to maximum upward social mobility."

Experimental classrooms were regarded as field sites. The materials were constantly revised. In 1966, after two years of instructions, the first group of six-year-olds "graduated."

What is the status of the present program?

Additional research data on DISTAR I and DISTAR II becomes available every year. The programs are constantly revised and expanded. Supplemental materials have been added to the original program. In addition, DISTAR III, Reading to Learn, is now commercially available.

Program Evaluation

How has the program been evaluated?

School evaluations of the DISTAR instructional systems are based on the use of all three programs. A preliminary version of the programs was used with small groups of disadvantaged pre-schoolers for two years. The youngsters showed constant growth in intelligence and word reading. After two years in the program one group had a mean IQ of 105 on the Stanford Binet and a mean word reading grade equivalent of 1.7 on the Wide Range Achievement Test. A second group showed a mean IQ of 121 and a mean grade equivalent in word reading of 2.6.

DISTAR was one of the treatment groups in a study of small groups of 3 and 4-year olds in the Ypsilanti, Michigan Public Schools. Significant changes in IQ were reported for all three treatment groups when compared with a control group. Mean Stanford Binet scores of the DISTAR children increased 30 points for the 3-year-olds, 24 points for the 4-year olds. All the students had been identified as functionally retarded and disadvantaged at the beginning of the study.

Schools in Las Vegas, New Mexico which included many children from economically depressed areas tested children in grade one and two after a year of using DISTAR. The mean scores on the Stanford Achievement Test of these first graders was grade 1.70 in Word Reading and 1.73 in Paragraph Meaning. The mean scores of the second grade group was 2.58 in Word Reading and 2.44 in Paragraph Meaning.

A pre-school program in above-average neighborhoods in Granite, Utah compared 32 matched pairs of 3 and 4-year-olds using DISTAR with those using a traditional curriculum. On the Gates MacGinitic Reading Test, the means for the DISTAR students in Vocabulary were 23.59 for boys, 20.25 for girls. Mean vocabulary scores for the control group were 15.77 for boys, 13.04 for girls. The mean Reading Comprehension scores for the DISTAR pupils were 12.14 for boys and 11.74 for girls. Mean comprehension scores of the students in the traditional curriculum were 5.84 for boys and 6.42 for girls. In word decoding on the Wide Range Achievement Test, the DISTAR students had means of 39.47 for boys, 43.00 for girls. The means for the control groups were 25.28 for boys, 24.46 for girls. In all cases the differences between the DISTAR children and the control groups were judged greater than would have occurred by chance.

The SRA Achievement Series in Reading and Arithmetic was used to evaluate children in grades one and two in the Synder Independent School District in Texas. The district includes inner-city and rural areas. Children who were judged to have learning disabilities and who used DISTAR during 1970-71 were compared with children who had no learning disabilities and who used basal reader programs. At the end of 1969-70, the first grade DISTAR children had a total reading score mean grade equivalent of 1.9. The children without learning disabilities had a total reading score mean of 2.2. At the Spring of 1971,the first grade DISTAR children had a total reading score mean of 1.8, the children without learning disabilities a mean of 1.8. In the second grades, the DISTAR children had a total reading score mean of 1.8 in the Fall of 1970. The control group had a mean score of 2.3. In the spring of 1971, the DISTAR children had a mean reading score of 2.6. The comparable score for the control group was 3.0.

Engelmann-Becker report that children who have been in the DISTAR instructional program for 3 to 4 years score at or above

national norms in word decoding as measured on the Wide Range Achievement Test. On sites where there was no Kindergarten program, 869 poor first graders had a mean word decoding score of 1.93. On sites where there was a Kindergarten program, 867 poor first graders had a mean word decoding score of 2.34. On the sites without a Kindergarten program, 918 poor second graders had a mean word decoding score of 3.31. On sites with a Kindergarten, 592 poor second graders had a mean word decoding score of 3.69. On sites without a Kindergarten 188 poor third graders had a mean word decoding score of 4.47. On sites with a Kindergarten 620 poor third graders had a mean word decoding score of 5.10. The results include the children who had completed a full year of DISTAR at their appropriate level only. Two thousand six hundred poor children in Kindergarten, and grades one and two who started the program in Kindergarten exceeded the average IQ score of 100 on the Slossen Intelligence Test. Mean IQ scores of the three grades ranged from 104.6 to 107.6.

In summary, DISTAR children in pre-school and Kindergarten show increased verbal ability as measured on IQ tests. Poor children who started DISTAR in Kindergarten and who were tested in Kindergarten, first grade or second grade show verbal ability in the average range as measured on an IQ test. DISTAR students tend to show scores above expected norms in word decoding. One study reported significantly greater gains in reading vocabulary and reading comprehension when DISTAR children were compared with children in a traditional program. This result occurred with pre-school children in an above-average neighborhood.

What are the indicated strengths and weaknesses of the program?

The research available shows increased verbal facility for poor and non-poor children who have been in the program one, two, or three years. Gains in word recognition are frequently reported after a full year in the program. Few studies report significant differences in reading comprehension when compared with a control group.

A detailed teacher's script including directions and questions to be presented is provided for each lesson. Assessment procedures are built into the program. The program is carefully structured. It provides opportunities for acceleration for children ready to move faster, and recycling procedures for children who need to refreshen skills learned earlier.

Because close structuring of skill elements, and a great deal of repetition are part of the program, the materials may not be appropriate for all children. Teacher-aides are usually employed to allow simultaneous instruction of DISTAR groups. Compared with a traditional program, materials' costs are high. In addition, teachers and aides must be willing to learn the DISTAR techniques and follow them.

Useful Information

Where can the program be obtained?

Science Research Associates
259 East Erie Street
Chicago, Illinois 60611

References

Chow, Stanley H. L., and Patricia Elmore. *Resource Manual and Program Description, Early Childhood Information Unit*. San Francisco: Far West Laboratory for Educational Research and Development, 1973.

Englemann, Siegfreid, and Elaine C. Bruner. *DISTAR Reading, Teacher's Guide*. Chicago: Science Research Associates, 1969.

Gordon, M.B. (ed.). *DISTAR Instructional System, Summaries of Case Studies on the Effectiveness of the DISTAR Instructional System*. Chicago: Science Research Associates, 1971.

Henrie, Samuel H. (ed.). *A Sourcebook of Elementary Curricula Programs and Projects*. San Francisco: Far West Laboratory for Educational Research and Development, 1972.

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The Fountain Valley Teacher Support System in Reading

Summary

The Fountain Valley Teacher Support System is a management system based on specifically stated behavioral objectives for grades 1 through 6. Student attainment of these objectives is measured on criterion-referenced tests. A resource guide is keyed to a wide variety of published materials. It gives the teacher references to a variety of materials which provide exercises and teaching activities appropriate to the specific behavioral objectives. A check-list form provides a pupil profile, and allows the teacher to keep a record of each pupil's progress.

Nature of the Program

For whom was the program designed?

The program was designed to aid teachers in grades one through six in implementing a skill-based reading program.

On what rationale was the program designed?

The program was designed to provide a diagnostic and prescriptive approach to the teaching of reading. The program provides a skill-based system for assessing pupil progress in reading. Each skill is cross-referenced to appropriate teaching activities. Two hundred and seventy-seven behavioral objectives form the basis of the system. A set of criterion-referenced tests measure reading development in terms of the objectives.

What are the general goals and objectives of the program?

The program was developed by the Fountain Valley School District (California) as a sequential skills development test battery that would permit them to:

1. Be accountable.
2. Provide meaningful behavioral objectives.
3. Provide a method for prescriptive reinforcements.
4. Provide continuous pupil progress profile record keeping.

Organization and Materials

How is the program organized?

The Fountain Valley Teacher Support System in Reading provides a Teacher's Alternative Supplement. This is the teacher's resource guide to teaching activities for skill development. The materials include basal text series, film-strips, phonics programs, and reading games. The first level Supplement contains approximately one hundred instructional programs which have been cross-referenced to appropriate skill objectives. The 277 behavioral objectives span six grade levels. The tests, which are self-scoring, measure skill development at six levels. One set of tests is provided at each grade level. They are extremely easy to use. Each test sheet is printed on NCR paper, so that as soon as the student circles his response it is automatically recorded on the snapout form. The teacher merely separates the test form and records the score on the continuous pupil profile. The profile keeps a record of the skills the pupil has mastered and those that must be retaught.

What specific objectives are involved?

The program delineates five areas in the reading curriculum: phonic analysis, structural analysis, vocabulary development, comprehension, and study skills. An example of the Fountain Valley test objectives is given by the ten objectives that deal with the sound-symbol relationship of vowels. These objectives test the short and long usages of the vowels a, e, i, o, and u. The recognition of each vowel is tested twice resulting in a total of 20 test items on these objectives. Testing proceeds by matching oral words and printed words.

How much student time is devoted to the program?

The allocation of student time is left to the discretion of the teacher.

What materials are provided for the student?

No lesson materials are provided for the student. The skill objectives are cross-referenced to a wide variety of basal texts and other reading materials which students may use.

What materials are provided for the teacher?

At each grade level, a *Teacher's Alternatives Supplement* provides cross-references to skill activities in basal texts, filmstrips, phonics programs, and reading games. A *Continuous Pupil Progress Profile in Reading* gives the teacher a check-list on which to record skills mastered and skills that need reteaching. Tests are provided to assess individual skills and prescribe appropriate skills for reteaching. Pre-recorded cassettes give pupils instructions for taking the tests.

How open is the program to supplementary and teacher-made materials?

The program is entirely open to supplementary and teacher-made materials.

What student assessment materials are provided or suggested?

Seventy-seven one-page tests are provided for student assessment. These tests are arranged in six grade levels. The tests are keyed to specific behavioral objectives. Hand-scoring and self-scoring editions of the tests are available. The hand-scoring form comes with a score key template that is placed over the test face sheet. The template corresponds to the backsheet of the self-scoring form. The hand-scoring and self-scoring test forms provide quick and immediate feedback to teacher and pupil. Instructions for taking the tests are provided on pre-recorded

cassettes so that the teacher does not have to read the directions to the pupils, or administer the test.

Classroom Activities

How are the classrooms organized?

Classrooms are organized at the discretion of the teacher. The program is appropriate for large group, small group and individualized instruction.

How are the materials used?

The cross-references in the *Teaching Alternatives Supplement* identify activities appropriate for teaching specific skills. The activities may be used to teach or re-teach specific behavioral objectives. The Fountain Valley Tests provide assessment measures of the specific behavioral objectives.

Every point on the pupil profile, every behavioral objective, and every teaching alternative utilize a complete *number coding* system so that an incorrect response on the student test sheet circles a number which correlates to the pupil profile, the behavioral objective, the diagnostic pattern, and a list of alternative prescriptions for recycling, reteaching and/or remediation.

Are teacher supplements used?

Teacher supplements may be used. They may be helpful to supervise and aid pupils taking tests, and in scoring the tests.

How is student progress assessed?

Student progress is assessed in terms of the number of specific behavioral objectives mastered.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

No special facilities are needed or suggested.

Is special equipment needed or suggested?

No special equipment is needed or suggested.

Is in-service training needed or suggested?

Minimal in-service training is necessary to acquaint the teacher with the program materials. All materials are convenient to use and easy to understand.

What provisions are made for special training of teachers?

The local Fountain Valley representative provides two teacher-training sessions for schools implementing the program. Additional assistance is provided upon request.

What provisions are made for training teacher supplements?

A minimal amount of instruction is necessary for teacher supplements. This instruction can be provided by teachers or other school personnel.

What is the cost of implementing the program?

The costs for implementing the program in a school with 504 pupils in grades 1-6 is given below. This would allow for three classes in each grade with an average class size of 28.

	Fountain Valley Teacher Support System	
	Self-Scoring	*Hand-Scoring*
Initial Cost per pupil	$3.31	$3.08
Replacement Cost per pupil	1.34	.34
Cost per pupil over 5 years	1.73	.89

Program Development and Status

How was the program developed?

The program was developed by teachers in Fountain Valley, California. Five hundred teachers and 39 coordinators contributed to the program development and field testing. Richard L. Zweig provided the classroom management system, and collaborated with the teachers and school administrators to produce the materials.

What is the present status of the program?

The program is operational at grades 1 through 6 and is being expanded. A readiness component will be available shortly. A program for 7th, 8th, and 9th grades will be available by the end of the year. A subscription service is being inaugurated. Schools which use the system may subscribe in order to receive new prescriptions. As new materials become available, they are keyed to the skills of the Fountain Valley system. These new skill prescriptions will be sent automatically to Fountain Valley subscribers.

Program Evaluation

How has the program been evaluated?

The Fountain Valley Teacher Support System in Reading was introduced in the Fountain Valley School District in September, 1971. The children in grades 1, 2, and 3 were tested in May, 1971, before the introduction of the system. These same grades were tested in May, 1972, after the system had been in use for a year. One thousand children in each grade were tested each year. Each grade scored slightly higher in reading achievement after the introduction of the program (Table 1).

Table 1

Reading Achievement Scores of Children in the Fountain Valley (California) School District Before and After Introduction of the Fountain Valley Teacher Support System in Reading[a]

	Grade Equivalent	
	May, 1971	*May, 1972*
Grade 1*	1.9	2.0
Grade 2*	3.2	3.5
Grade 3**	3.8	4.1

[a] In each grade level, n = 1,000.
* Scores measured on *Cooperative Primary Reading Tests.*
** Scores measured on *Stanford Reading Test.*

A second study compared two classes in the Newport-Mesa School District, Costa Mesa, California. The classes were balanced in terms of population. First graders using the program showed a grade equivalent on the *Cooperative Primary Reading Tests* of 3.3. Those in the comparable class using a traditional program scored 2.0.

What are the indicated strengths and weaknesses of the program?

The Fountain Valley Teacher Support System is a skill-based program which provided appropriate criterion-referenced assessment materials. The tests are hand-scored or self-scored to provide immediate feedback to student and teacher. Initial evaluations of the program appear promising, but broader field testing is needed. Particularly needed are studies of reliability and validity of the assessment materials. A major strength of the program is its simplicity of use.

Useful Information

Where can the program be obtained?

The *Fountain Valley Teacher Support System* is published by:

Richard L. Zweig Associates
20800 Beach Blvd.
Huntington Beach, California 92648
(714) 536-8877

The program may be obtained locally from:

Albert J. Krauza
Union School Products
609 S. Broad Street
Elizabeth, New Jersey 07202
(201) 351-1664

Evaluation of the program (particularly of the mathematics components) have been conducted by:

Dr. Stephen P. Klein, Director
Evaluation Technologies Program
Center for the Study of Evaluation
Graduate School of Education
University of California, Los Angeles
Los Angeles, California 90024
(213) 825-4711

References

Richard L. Zweig Associates. "A Constructive Analysis of the Prescriptive Reading Inventory to the Fountain Valley Teacher Support System in Reading." Huntington Beach, Calif.: Richard L. Zweig Associates, 1971. (Mimeographed.)
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Higher Horizons 100

Summary

Higher Horizons 100 is a program which provides intensive remedial language training and counseling to ninth-grade students from the disadvantaged areas of Hartford. The program selects 100 students each year who are of average intelligence, free of serious emotional problems, and retarded one to three years in reading. These students attend Hartford Public High School, but in a school-within-a-school setting which is separate from the other ninth-grade students except for physical education. The program operates within its own cluster of rooms and has its own special curriculum. Annual pre-and post-testing on standardized achievement tests show the program consistently improves the reading and writing scores of the students, although gains in other curriculum areas are less impressive.

Nature of Program

For whom is the program designed?

HH100 was initiated to provide special help to children of families moving into the poverty areas of Hartford. These children typically were characterized by poor school records and serious language disabilities. To be chosen for the program, a student must be recommended by his counselor as a ninth-grader of average intelligence, with no serious adjustment problems, and in need of intensive language and reading remediation. The desire of the student to be part of the program, and the willingness of his parents were also selection criteria.

On what rationale was the program designed?

A study of the demographic and welfare records undertaken in the 1960's revealed a pattern of mobility with serious educational implications. These records showed that more families were moving out of the city than were moving in, and that the incoming families were larger and poorer than those emigrating. The children coming into the city characteristically had poorer school records, more school adjustment problems, and greater language deficiencies than the students they were replacing. The Higher Horizons 100 program is an effort to provide a transitionary program for those incoming students who are beginning high school with serious academic deficiencies.

What are the general goals and objectives of the program?

In general, the program is designed to:
Provide a setting for curricular experimentation and development in an effort to provide for the particular needs of a selected group of poverty children.

Assist the students in their transition to regular high school instruction.

Remediate specific learning disabilities, especially in the language areas of reading and speech.

Provide experiences not otherwise attainable in the out-of-school environment.

Promote higher educational and life goals by improving the self-concept of the students.

Organization and Materials

How is the program organized?

Organized as a school-within-a-school, HH100 has its own staff and curriculum. The staff consists of a Program Coordinator, four subject area teachers, two language specialists, a guidance counselor, and a project assistant. Subject areas covered are English, mathematics, science, speech, remedial reading, and social studies. Since the program operates within its own set of classrooms, a semi-cloistered environment is maintained within which students can be given individual attention. Classes are kept small, averaging about 25 in the content areas, and 12 to 15 in the remedial sections on speech and reading. English and mathematics classes are grouped homogeneously to permit additional emphasis on language disabilities. The daily schedule is flexibly organized to permit tutorial study halls, field trips, large group sessions, and the like.

What specific objectives are involved?

While the program is not totally diagnostic-prescriptive in nature, it is planned in detail covering objectives, content, materials, and techniques used to individualize instruction. Language remediation is considered part of the total program and is emphasized in all classes regardless of subject area. The students receive language remediation not only in English, speech, and reading, but also as an integrated part of social studies, math, and science. The integrated content of the program is planned at weekly staff meetings and during he summer.

How much student time is devoted to the program?

For the students selected, the HH100 program constitutes their total school experience for the ninth grade, except for physical education which is taken twice a week in the regular school program. The basic school day consists of homeroom followed by six 45-minute periods, but this schedule is frequently adjusted. A typical student's schedule on any given day might be as follows:

Homeroom	Conducted by first-period content-area teacher prior to beginning the day's instruction.
Period 1	English
Period 2	Mathematics
Period 3	Social Studies
Period 4	Science

Period 5	Speech and Reading (Taught on alternate days)
Period 6	Physical Education (Twice a week)
	Supervisod Study (Three times a week)

What materials are provided for the program?

Materials are selected to appeal to student interests and abilities. Extensive use of audiovisual equipment is made in all classes, and a special paperback library is available for home use. The materials listed below are a sample of materials used in English and language classes.

Books
Christ, *Modern English in Action*
Warriner, *English Grammar and Composition*
McCart, *Reading/Writing Workshop*
The Way It is, Xerox publication
Christ (ed.), *The Odyssey of Homer*
Steinbeck, *The Pearl*
Parks, *The Learning Tree*
Barrett, *Lilies of the Field*
Bontemps (ed.), *American Negro Poetry*
Rudd, *Word Attack Manual*
Building Reading Power, a programmed course
Basic Reading Skills, published by Scott Foresman
Various high interest stories

Audiovisual Equipment and Materials
Tape Recorder
Filmstrips
Movies
Television
Phonograph Records
Overhead Projectors
Opaque Projectors
Controlled Reader and filmstrips, Educational Development Laboratories
Language Master and materials, Bell and Howell
Flash-X, Educational Development Laboratories

Classroom Activities

How are classrooms organized?

Classroom organization varies according to subject and instructor-student preferences. In all cases, however, the emphasis is on individualization of instruction.

How are the materials used?

A wide variety of techniques are used to individualize instruction within an overall articulated plan. One plan used in English is to allow the student to choose the grade he wishes to make on a particular unit, and to contract the amount of work required for that grade. Positive class participation and completion of daily assignments is the base requirement for all passing grades. Higher grades are associated with correspondingly higher test scores and the completion of more assignments. The student is allowed to choose assignments from a list.

Individualization in reading and speech is on the diagnostic-prescriptive pattern. Student language levels are determined through testing, and readily attainable, short-term goals are set. Individual records and interclass competitions are used as motivating devices with which a student can demonstrate his progress.

Are teacher supplements used?

Neither paraprofessionsals nor volunteer teacher-aides have been used in this program, although they would be a valuable addition.

How is student progress assessed?

In addition to the procedures employed in each classroom to assess student growth in the curricular areas, a series of pre- and post-tests have been given each year to measure the overall effectiveness of the program. These tests will be discussed in the evaluation section.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The staff emphasizes the importance of having a special area to foster the separate school-within-a-school identity, but this area need only be a set of contiguous classrooms. The remedial nature of the program calls for somewhat different and more elaborate curricular materials.

Is special equipment needed or suggested?

In a program of this type, audiovisual aids and remedial devices may need to be more abundant and varied than is found in the typical classroom of all but the best equipped schools.

Is in-service training needed or suggested?

HH100 emphasizes the team planning necessary to presenting an articulated program. The staff meets once weekly for critiques, planning, and discussions of individual students. At these meetings, the teachers cooperatively plan their class activities and develop coordinated techniques for dealing with each student's unique problems. In addition, the staff spends four weeks in the summer planning the year's program, training new staff, reviewing student profiles, and meeting the incoming students and parents during home visits.

What is the cost of implementing the program?

Since the school-within-a-school concept involves curriculum reorganization primarily, costs of the program above regular costs are moderate. The budget for HH100 in a representative year was $94,125, but most was for personnel costs. The per pupil cost of the program is generally approximately $900, as compared to regular pupil expenditures of $800.

Program Development and Status

The HH100 program was initiated in 1965 to meet a developing problem in the community. While the detailed program is subject to continuous change and development, the overall form of the program has remained the same.

What is the present status of the program?

The program is continuing under funds from the Connecticut State Act for Disadvantaged Children. In 1971, it was chosen for review as an exemplary program by the American Institute of Research, and the program is one of five selected for national dissemination by the Right-To-Read Effort. Other high schools in Hartford now have similar programs.

Program Evaluation

How has the program been evaluated?

The general objectives of HH100 concern the improvement of (1) reading ability, (2) writing skills, (3) scholastic achievement generally, and (4) self-concept. The program evaluates the cognitive goals through a comparison of pre-and post-test results. Self-concept evaluation has been attempted, but without notable success.

What are the indicated strengths and limitations of the program?

The *Lorge-Thorndike Intelligence Test* is administered at the beginning and end of each year. Although the staff believed that improved reading skills should be reflected in improved scores on group aptitude tests, no such results have been obtained. Gain scores have been nonsignificant and occasionally negative. The program has no demonstrable effect on its

students' intelligence test performance.

The major areas of success for the program are specifically in the areas given greatest stress: writing and reading. Gains on the *SRA Writing Skills Test* and the *Iowa Test of Silent Reading* are consistently significant and impressive. In general, the improvement in writing skills has brought the students from a pre-test percentile of 22 to a post-test rank of 50. Reading gains are generally at 1.5 grade equivalent units or above for the nine-month period.

Results on the *Metropolitan Achievement Tests* are mixed. Improvement on the Reading subtest is consistent and impressive, with average gains ranging from .8 to 3.3 grade equivalent units over the years. The Word Knowledge subtest results are generally significant but of lesser magnitude. Other subtest areas vary from year to year and are often nonsignificant.

Useful Information

Where can information about the program be obtained?

For additional information about the program, contact:

Mrs. Mamie White, Program Coordinator
Hartford Public High School
55 Forest Street
Hartford, Connecticut 06105
(203) 278-1365

For evaluation information, contact:
Mr. Robert J. Nearine
Coordinator of Evaluation
Hartford Public Schools
249 High Street
Hartford, Connecticut 06105
(203) 566-6534

References

National Center for Educational Communication. *Higher Horizons 100.* In *Model Programs, Compensatory Education* Series. Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, 1972. (OE 72-81).
Right to Read Effort. *Higher Horizons 100.* In *Information Capsule* Series. Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, no date.
Wargo, M.J., *et al. "Further Examination of Exemplary Programs for Educating Disadvantaged Children."* Los Angeles: American Institutes for Research in the Behavioral Sciences, 1971. (ED 055 128).

High Intensity Learning Systems—Reading

Summary

High Intensity Learning Systems-Reading is an instructional system which defines each student's unique reading needs and prescribes appropriate reading activities to fill the student's needs. It enables one teacher to manage the individual program of 30 students per class hour—150 students a day. The program combines individualized reading materials from over 40 publishers, including more than 1,000 trade books, with a comprehensive classroom management system. It is designed to meet the needs of any student from grade one through high school, whether he is a good reader, or poor reader.Random House provides a staff development program to help school districts set up Reading Centers and implement the system. The High Intensity Program has already helped over fifty thousand children learn to read.

Nature of the Program

For whom is the program designed?

The program is designed to meet the needs of any student from grade one through high school.

On what rationale was the program designed?

The program developers believe that intensive, quality instruction can offset the effects on reading achievement of racism and poverty. They assert that replacing one publisher's materials with another's is not a curriculum change. Curriculum redesign requires "an efficient and humane redeployment of human, instructional, physical, and fiscal resources in the school to reach operationally defined instructional goals." Such a systems approach to the reading curriculum can be designed, delivered and implemented at a cost effectiveness level superior to "programs" (publishers materials) now being used.

What are the general goals and objectives of the program?

Stated simply, the goal of High Intensity Learning Systems is to teach kids to read, especially the ones who do not normally achieve in the public schools. The movement toward *accountability* has been an important impetus to the development of the system. The program clearly specifies appropriate objectives for each student's learning. Both teacher and student know definitely what the student must learn. They know the methods and materials he must use, and they know what he must do to show that he has mastered the specified objective. Reading is more than test measures, but in order to read at a given level, the student must master certain skills. It is helpful to break these skills down into specific concrete behaviors. Specific assessment techniques can then be made for each of these behaviors.

Organization and Materials

How is the program organized?

High Intensity Learning Systems-Reading has two basic sets of components. They are:

1. A collection of reading materials from more than thirty different publishers.

2. A classroom management system that helps the teacher make diagnostic decisions about a student's reading. It provides the behavioral analyses the teacher needs for assessments. It provides prescriptions for instruction based on these assessments. It also provides classroom management strategies so that one teacher can operate as many individual curricula as there are students in the class.

The most important component of the Classroom Management System is the *Catalgoue of Instructional Objectives and Prescriptions*. This two-volume catalogue contains approximately 500 specific reading behaviors or instructional objectives. Each instructional objective (1-0) is followed by a list of prescriptions which help the student master that particular I-O. These prescriptions are learning activities selected from the resource materials. The system provides Check-In Tests and Check-Out Tests which help the teacher determine which I-O's each student needs, and which he has mastered. Both components are necessary to operate High Intensity Learning Systems-Reading.

What specific objectives are involved?

There are several concepts fundamental to High Intensity Leanring Systems-Reading. Most important are:

1. Prescriptive or "so what?" diagnosis. This system will provide tools for analyzing each student's reading behavior. More important, it answers the question "so what shall I do about it?" by helping the teacher prescribe appropriate activities for instruction.

2. Motivation. The system provides motivation through immediate reinforcement; the student gets "feedback" right away to let him know whether his response to a "learning stimulus" has been adequate. Feedback to the learner and presentation of appropriate learning stimuli are continuous processes.

3. Individualization. The system involves a large variety of specially designed materials, so the teacher can personalize content, rate, and level for each student.

4. Intensified Instruction. Students learn efficiently through an intensified approach using appropriate books, materials, technology and systems. Learning maximizes the amount of "reading period" time each student spends on appropriate learning activities.

5. Performance objectives and the criterion-referenced assessment techniques. With a goal of 500 well-defined reading behaviors, schools can plan their curricula more clearly; they can also evaluate the student's performance knowing precisely what they are trying to measure.

Skill objectives in the program fall into three large classes. word attack, comprehension, and study skills.

How much student time is devoted to the program?

Students devote one class hour daily to the program.

What materials are provided for the student?

Materials from over 40 different publishers form a library of reading materials. All are self-instructional and are arranged so that they are non-consumable. They are arranged in broad difficulty levels, beginning readers to 12th grade achieving readers, with materials at intervening levels for both achievers and underachievers. No basal reader materials are included. Some of the materials include:

Bantam Books—*Chicano Cruz, The Contender, Cheaper by the Dozen, Can't You Hear Me Talking To You, Hot Rod, Star Trek*
Barnell Left, Ltd.—*Specific Skills* Series
Borg-Warner Educational Systems—*System 80*
Individualized Instruction, Inc.
Economy Co.—*EARS, Spacetalk*
Learning Research Associates—*The Michigan Language Program*
J.P. Lippincott—*Reading for Meaning*
McGraw-Hill Book Co. EDL—*EDL Study Skills Kits*
Prentice Hall—*Be A Better Reader*
Random House—Random House Reading Program—*Word Pacers*—7 Sets of *Carousel Books*
Teachers College Press—Gates Peardon Reading Exercises
McCalls Crabbs
Weston Woods—Sound Filmstrip Sets

What materials are provided for the teacher?

Random House Educational Systems Division supplies soft materials for the system, some of which are:

Basic Test of Reading Comprehension
I.O. (Instructional Objectives) Catalog, Vols. 1 and 2
Check Test Booklets
Check-In Test Pads with Answer Keys
Check-Out Test Box and Answer Keys
Instructional Managers Guide

The I.O. Catalog identifies skill activities in each of the commercial materials. The samples below show this materials analysis.

Application Forms (Local)
475
Ad Wes—Addison Wesley
Kit A
069, 075, 076, 087, 107, 170, 194, 212, 220, 249, 304, 347, 360, 361, 365, 390, 423, 424

Kit B
282, 304, 308, 327, 343, 347, 362, 363, 364, 390, 458, 459

ARP—Audio Reading Progress Lab (EPC)
Level 1
006, 007, 008, 009, 011, 061, 061a, 061b, 061c, 068, 081, 081a, 081b, 081c, 084, 093, 093a, 093b, 093c, 095, 100, 100a, 100b, 100c, 104, 120, 120a, 120b, 120c, 124, 136, 136a, 136b, 136c, 137, 138, 184, 192, 249, 260, 265, 327, 334, 355, 389, 399

Level 2
061, 061a, 061b, 061c, 068, 070, 081, 081a, 081v, 081c, 092, 093, 093a, 093b, 093c, 096

Each activity identified is coded to one of the 500 skill objectives. Then the skills are listed by number with a choice of activities for each skill. The teacher chooses from these activities to make a prescription. Student input to the prescription in the form of check-in tests tells the teacher which skills the student needs to practice.

Examples of some of the skill prescriptions are shown below.

Sample I.O. Prescriptions

026

Skill Given a word visually, the student selects from X choices the word that matches the given word.

Prescriptions
MLP—RW 3: pp. 8, 9, 22, 23, 41, 42, 44, 69, 70, 73, 100, 101, 104, 128, 129, 132, 153, 154, 158, 159
MLP—RW 4: pp. 4-7, 10, 20-23, 25, 26, 36-39, 51-55, 67-70, 81-84, 95-96, 110-112, 114, 116, 118, 119
MLP—RW 5: pp. 5-10, 23-25, 41-46, 61-70, 86-92, 103-106, 109-110, 122, 123, 125-128, 130, 143-151, 164-170, 183-187, 189-194
MLP—PT: 29, 32#4-5, 36#3-6, 40#4-8, 43#4-7, 46#4-8, 49#4-10, 58, 61, 65, 71, 79, 83, 87, 90, 94, 97

130

Skill Given a picture for a one syllable word, the student selects one of X vowels that represent the medial sound of that word.

Prescriptions
Wordpacers—SkSpot E: #4
Def. E: #4, 5
E: Blue #6
PW (B) 181, 183, 187
PWV (E) 112 (G) 108, 110, 111
CR 105, 125, 128, 134
MWDS 94
DRS (A) 15, 31, 37, 61 (B) 13 (C) 9

267

Skill Given a sentence visually, the student identifies the 2 words that are homonyms.

Prescriptions
PH Wr See A—pp. 28, 42, 43, 56, 57, 76, 77
B-pp. 9, 19
Tr Th (1) 61, 66 PW (C) 18
MWVS 23, 24 MWDS 15
PW (A) 139, 174, 187, 188, 199, 213, 229
Writes the Vowel:
PWV (C) 51, 56, 62, 64
(E) 30, 46

373

Skill After reading a book (selection), the student demonstrates an understanding of the author's style or the structure of the book (selection) by answering specified questions.

Prescriptions
ARP Level 5—Lesson: 10B
Level 6—Lesson: 8B, 11B
Level 7—Lesson: 6A, 11A
Level 8—Lesson: 6A, 10B, 11A, 11B
RHRP—Tan: 12, 14
Olive: 12, 14
Skilpacer Tan—12: all items, all cards
14: all items, all cards
Skilpacer Olive—12: all items, all cards
14: all items, all cards
One to One—Literary Ability 8: Plot
Literary Ability 10: Setting
Literary Ability 11: Structure
Literary Ability 12: Style
Literary Ability 13: Theme
Literary Comparison 5: Novel #2-5
Literary Comparison 7: Theme #1-3
One to One—Specific Interest: 1-21
Specific Books: #1-60
One to One—General Biography: 1-6
General Fiction: 1-5
Poetry: 1-5
Short Stories: 1-4
This objective is assessed by teacher observation.

How open is the program to supplementary and teacher made materials?

High Intensity Learning Systems-Reading is an open system. Self-instructional materials may be added.

What student assessment materials are provided or suggested?

The *Basic Test of Reading Comprehension* is a placement test. *Check-In Tests* and *Check-Out Tests* assess skill development.

Classroom Activities

How are classrooms organized?

Classes come to the reading center. The reading center is arranged so that students can easily reach their folders and the materials with which they will work. Reading centers have an attractive informal reading corner where children read trade books, and another corner set up with cassette recorders where students record their own poetry readings. In setting up the reading center, attention is paid to minimizing congestion and facilitating attention to learning activities.

How are the materials used?

Based on *Check-In Test*, the teacher knows the skills each pupil needs to work on. With the help of the *I.O. Catalog* and her knowledge of the student, the teacher makes a prescription for each student. The student keeps track of his skill work on a wall chart. He first writes the skill numbers of the prescriptions on the wall chart. After working on the prescriptions, he crosses off the skills he has mastered as he passes the *Check-Out Tests*.

Are teacher supplements used?

The system is designed so that one teacher can handle 30 children at a time, about 150 children a day. Aides are useful if funds are available.

How is student progress assessed?

A placement test (*Basic Test of Reading Comprehension*) gives the student's initial reading level. The teacher then begins to give him *Check-In Tests* in specific subskills. The teacher collects a group of *Check-In Tests* (I.O's) in which the student needs practice in order to give him a suitable prescription. When the teacher or the student feels he is performing each of the prescribed I.O. tasks well, he takes the *Check-Out Test*. A wall chart keeps track of the I.O.'s he is working on, and the ones he has mastered.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

It is necessary to set up a reading center with appropriate work areas and storage areas for materials and pupils' records.

Is special equipment needed or suggested?

Cassette recorders and playbacks, film strip projectors, pacers, head sets, stopwatches and other small items are needed or suggested.

Is in-service training needed or suggested?

In-service training is necessary.

What provisions are made for special training of teachers?

A Staff Development Program trains teachers. This involves a three-day workshop, two or more follow-up workshops, and monthly support for the first year. Subsequent training is usually done within the school system.

What provisions are made for training of teacher supplements?

Teacher supplements are included in the teacher training program.

What is the cost of implementing the program?

Cost for the management system is $1,500. The inventory of materials is approximately $7,000. The Staff Development Program is $5,500. This trains about 30 people—teachers, supervisors and aides—who in turn will manage up to 5 centers. A district may set up five centers each of which will handle 150 students a day. Most of the materials of the management system and all of the inventory of materials for student use are reusable. Random House advises that initial costs, $64.00 per student, should be considered over a 5 year span. This brings the yearly per pupil cost to $12.80 plus the few consumable items. After the initial cost, $3 to $4 per student per year will keep the program running. Costs may vary, however, depending on the age of the children, the items on hand, and numerous other local conditions.

Program Development and Status

How was the program developed?

The program was developed by Dr. S. Alan Cohen and Dr. Ann Marie Mueser. Working with Dr. Abraham J. Tannenbaum, Dr. Cohen developed the *Taxonomy of Instructional Treatments in Reading* and a classroom analysis scheme derived from the taxonomy. Later, the taxonomy was used in a systems approach to reading instruction known as the Reading Skills Center. Based on his research, Cohen states that in more successful teachers' classrooms, children were more involved in learning than in less successful teachers' classrooms. The term "more involved" includes such descriptions as "liking what he's doing," "sticking to it," "interested" and like terms. The P ratio was developed by Cohen to measure this involvement. It measures *pupil participation in prescribed* learning activities. A class P ratio is derived by sampling participation students. Non-participation of the student may be the result of a variety of situations. For example, the student may be waiting for the teacher, or he may be waiting for certain materials or equipment, or he may be doing something which has nothing to do with the learning activity at hand. According to Cohen's research, the greater students' participation in the prescribed learning activity, the more measured achievement occurs. The "best" teachers of reading had children participating in prescribed learning activities 56 per cent of the time. Average teachers had P ratios of 30 to 40 per cent. A simplification of Cohen's P ratio is part of High Intensity Learning Systems-Reading.

What is the present status of the program?

High Intensity Learning Systems continues to be modified and expanded. A nation-wide system for updating the instructional materials as new programs are produced is now in operation. Modifications of classroom management techniques are being developed. The curriculum is being expanded to include mathematics.

Program Evaluation

How has the program been evaluated?

A study at P.S. 148 in New York City reported delinquent boys gained 1 year in four months time and 2 years in 8 months time. In Williamsville, New York, after 3 months in the program an average population showed a mean gain in vocabulary of .41 and a mean gain in comprehension of .63. Students in Appalachia showed a mean gain nearly a full year greater than expected gain (.4 year for this population) after about 100 hours of instruction. Average gain was 1.2 years growth.

A large study in Omaha, Nebraska followed the progress of over 2,000 children in grades 3-11. Pre-tests were conducted six weeks after the system was installed. Post-tests were conducted 4 1/2 months later. Mean gain was nearly double the gain ex-

pected for average students (.87 year gain after .45 year instruction). The mean gain was about three times the expected gain for Title I students in this school system. Measuring constraints in the Reading Centers' operation, the researchers concluded that the system was able to control negative teacher-school effects. That is, while positive attributes of teacher-school effects showed in the achievement results, even the "worst" centers had average gains somewhat greater than expected gains for average students.

What are the strengths and weaknesses of the program?

All evidence points to the effectiveness of the program, even with severely disadvantaged populations. However, most of the evaluation studies cover only a period of several months. The program would seem to warrant long-term evaluation.

Useful Information

Where can the program be obtained?

Random House
Educational Systems Division 5-5
201 East 50 Street
New York, New York 10022

References

Cohen, S. Alan. "The Taxonomy of Instructional Treatments in Reading: Its Uses and Its Implications as a Classroom Analysis Scheme," *Journal of the Reading Specialist*, 2:5-23. October, 1971.

Cohen, S. Alan and Anne M. Muesser. *Instructional Manager's Guide: High Intensity Learning Systems-Reading*. New York: Random House, 1972.

Random House Educational Systems Division. *Research Report: Omaha Project*. New York: Random House, 1972.

Random House Educational Systems Division. *High Intensity Learning Systems-Reading*. New York: Random House, n.d.

Interning for Learning

Summary

Interning for Learning is a program developed to meet conditions in the relatively sparsely populated county of Cape May, New Jersey, which has 10,000 students distributed among 14 school districts. A centralized program was needed which could bring together the resources of more than one district while allowing the autonomy necessary for local decisions. Beginning with the assumption that school improvement depends centrally on teacher improvement, the program focuses on voluntary in-service training as the means for encouraging individualization of instruction. The program began by training two teachers in the techniques of individualized instruction. Nine teachers, in turn, trained ten others in grades 1 through 6. By 1972-73, the program had been extended through the eighth grade and had included several teachers and principals from outside the county.

Nature of Program

For whom is the program designed?

The program was designed to offer a method of comprehensive in-service training for the 550 school staff members of the 14 school districts of Cape May.

On what rationale was the program designed?

The program is based on the central idea that program improvement is primarily a function of teacher in-service training, and that such training must involve teachers in all stages from planning to implementation. An initial survey of county teachers found that the teachers' most common need was for help in individualizing instruction. In order that such instruction could be replicated throughout the county, a voluntary program of teachers training teachers was developed.

What are the general goals and objectives of the program?

The general goals of the program were stated as follows:

a. One hundred percent of the project participants will individualize their instructional programs.

b. Project teachers will use at least twenty experimental techniques and new approaches to teaching.

c. At least twenty-five percent of non-participating teachers will adopt the successes of the project as a spin-off effect.

d. There will be a 50 percent increase in the number of children realizing personal success and increased interest in school.

Organization and Materials

How is the program organized?

The program is directed by a project committee made up of teaching and administrative staff members from the participating districts and a project staff. A Center for Interning for Learning was established at one school for central training functions. This Center includes a Resource Center for making and demonstrating new materials, and a demonstration classroom employing learning stations. The major in-service training component places teachers as interns in the classrooms of trained teachers where the intern-teacher practices new instructional techniques and works on developing materials.

What specific objectives are involved?

The specific objectives of the program center around the following:

a. Diagnosis of level of instruction for each child in each subject.

b. Provision of instructional materials allowing individualization and small group activities.

c. Development of instructional procedures promoting concrete understanding of concepts, often through manipulative activities.

d. Development of optional interest areas inviting exploratory activities.

e. Student self-evaluative precedures in all areas.

f. Evaluation and record-keeping procedures.

How much student time is devoted to the program?

Student time is not involved in the materials development and in-service training.

What materials are provided for the students?

Materials provided differ from school to school, but include a variety of commercial and project-developed materials.

What materials are provided for the teacher?

Teachers are provided with regular school equipment, including audio visual supplies, and in addition are allotted $250 with which special materials and supplies may be ordered on an individual basis.

How open is the program to supplementary and teacher-made materials?

A major thrust of the program is the development of teacher-made classroom materials and the dissemination of those which prove most successful.

What student assessment materials are provided or suggested?

Ongoing student assessment is centered around a weekly student assessment sheet. Assessment procedures vary from grade to grade.

Classroom Activities

How are classrooms organized?

Classrooms may be arranged according to teacher preference but should include the following:

a. An Instructional Area capable of containing several students with bookshelves and blackboards available to it.

b. A Follow-Up Area consisting of tables or desks arranged in groups.

c. An Independent Area, usually along one wall, arranged to facilitate individual work.

d. An Interest Area designed to facilitate exploratory activities with a variety of materials.

e. A Listening Area consisting of audio equipment and headphones.

How are materials used?

A major emphasis of the program is on learning by doing through a variety of individual and small group projects and activities. An effort is made to ensure that each child understands the purpose of each activity at each station and their own responsibilities for the activities and self-discipline.
The handling and use of equipment and materials and the kind of evaluation to be used is explained.
Goals are generally limited to one or two objectives, and work procedures are demonstrated. The children work independently and in small groups under the supervision of the teacher.

Are teacher supplements used?

No teacher aides or paraprofessionals are used with the program to date, but the types of instruction involved would make such use very helpful.

How is student progress assessed?

Students are encouraged in many ways to evaluate their own progress and the progress of the group. Teacher evaluation of progress is continuous through spot checking, observing, informal conferences, and periodic testing.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

Special facilities for the program mostly consist of arrangements of furniture and equipment typically found in schools. Some modest carpentry would be useful in building learning stations, counters, and specialized storage cabinets.

Is special equipment needed or suggested?

No equipment is needed beyond that typically found in a well-equipped school.

Is in-service training needed or suggested?

In-service training is the central component of the program.

What provisions are made for special training of teachers?

Teachers are trained in new techniques and the use of new materials at the Center for Interning for Learning. Nine teachers then act as trainers of others by working with them in the classroom for two-week periods (out-of-county teachers intern for one week). After interning, in-service training is maintained by visits to the Center and by support from project staff.

What is the cost of implementing the program?

The project has been funded through Title III funds matched by funds from the participating districts. Costs would vary widely depending on a number of local options. Funding for 1971-72 was $40,000 and for 1972-73 was $67,412.

Program Development and Status

How was the program developed?

The program was developed locally based on a program in use in Prince Georges County, Maryland. Dr. Gilbert Shiffman and Dr. Paul Daniels of Johns Hopkins University served as consultants to the project. In 1971-72, twenty-two teachers were trained and their classrooms were established as exemplary classrooms. In 1972-73, an additional 44 teachers were trained, and their classrooms established for training purposes. This year an additional 44 teachers will receive training, and the program will be extended to special education classes.

What is the present status of the program?

The program is continuing to provide in-service training to teachers previously trained and to new interns. In addition, the program is accepting interns from out-of-county districts.

Program Evaluation

How has the program been evaluated?

The program was evaluated through on-site visits in 1972 prior to selection for statewide dissemination by the New Jersey State Education Department. Project evaluations at that stage of development focused primarily on opinion samples and attitude inventories of personnel involved about various aspects of the program. Pre-test data was collected for empirical comparison with test results in 1973-74. Project evaluators in 1972 reported that, in their opinion, the project was achieving far more than indicated in formally-stated objectives.

In 1973, an evaluation of the project was conducted under the auspices of the national Title III program, and the project was one of those selected for national dissemination by this group of evaluators. This evaluation rated projects on the basis of innovativeness, success, exportability, and cost-effectiveness.

What are the indicated strengths and limitations of the program?

Project evaluations cite improved student-teacher relations and greater flexibility of instruction as major outcomes of the program. Students enjoy working through the "learning station" approach, and the great variety of materials help maintain interest. Costs are moderate at the setting up stage, and add little to normal costs once the project is operating. A disadvantage could be the very great amount of staff work which goes into the development of materials, but this has not been a problem in Cape May due to the amount of enthusiasm generated by the project.

Useful Information

Where can the program be obtained?

For additional information concerning the program, contact:

Interning for Learning Center
Rio Grande Elementary School
Delsea Drive
Rio Grande, New Jersey 08242

References

Office of Program Development, Division of Research, Planning and Evaluation. *The Change of Pace, A Catalogue of Innovative Educational Projects in New Jersey Funded Under Title III, Elementary and Secondary Education Act*. Trenton: New Jersey State Department of Education, 1973.

Penfield, D., and Kaplan, Larry. "Project Evaluation Report: Interning for Learning." Trenton: Division of Research, Planning and Evaluation, New Jersey State Department of Education, 1972

Juan Morel Campos Bilingual Center

Summary

The Juan Morel Campos Bilingual Center was established in an economically disadvantaged neighborhood to open intermediate grade instruction to 12-14 year olds who are newly-arrived from Spanish-speaking countries. These children, who speak little or no English, have little hope of benefitting from classes taught solely in English. The Center's program seeks to strengthen the child's literary and academic skills in his native language, while teaching competence in English. In addition, English-speaking children attend the Center to serve as Language models and to learn Spanish and an appreciation of the Spanish culture. Interaction between the two groups was fostered through special bilingual conversation classes, integrated subject matter classes, and bicultural social events.

Classes at the Center are ungraded, with the children grouped by English proficiency levels. All children work toward a standard set of objectives. Individualization of the curriculum is made by difficulty-level adjustments, special instruction, and similar resource aids. A diagnostic-prescriptive approach to instruction is emphasized throughout. The staff has translated and developed many teaching materials and testing devices. Test results show encouraging gains in language, subject matter, and IQ scores.

Nature of Program

For whom is the program designed?

The program is designed for children drawn from grades 6, 7, and 8 (aged 12-14 years) who have recently arrived from Spanish-speaking countries, and who cannot function in English adequately to profit from the work of the conventional classroom. These children come primarily from Puerto Rico and are often poorly-educated in their own language.

On what rationale was the program designed?

The program developed out of a concern for the large number of Spanish-speaking children who were dropping out of school before high school graduation. It was believed that the basic cause of the high attrition rate was the difficulty these children had in adjusting to an English-based school program and different cultural expectations. Arriving in this country with poorly-developed academic skills, the children fell irreparably behind during the period when they were learning to use English. The combination of academic retardation and second language difficulties proved overwhelming in the normal high school. The program seeks to overcome these difficulties by providing remedial and developmental academic instruction in the student's native language, while working intensively to develop proficiency in English.

What are the general goals and objectives of the program?

In general, the objectives of the Center are:

To enable the Spanish-speaking children to maintain and improve their academic achievements in social studies, arithmetic, and science. To provide the learning experiences that will enable the Spanish-speaking student to learn to speak, read, and write English fluently in terms of age and ability.

To maintain and develop reading and writing skills in Spanish.

To develop an awareness and pride in the Spanish cultural heritage, and to integrate this heritage with that of the United States mainland.

To teach the "Anglo" children Spanish and to impart a knowledge and appreciation of the Spanish cultural heritage.

Organization and Materials

How is the program organized?

Classes at the Center are ungraded with children grouped according to their proficiency with English. Spanish-speaking students attend three 40-minute periods of intensive English instruction (TESL) every morning on four days a week. The morning of the fifth day is devoted to music, art, or special tutoring. Afternoon periods are devoted to academic subjects taught initially in Spanish with a transition to English beginning after the first year.

The "Anglo" children attend the same math, science, and social studies as the more advanced Spanish-speaking students. The balance of their day is spent on language arts classes (two periods) and Spanish classes (two periods). Once a week, all children receive instruction in music, art, physical education, health instruction, and a bilingual class on conversational language.

What specific objectives are involved?

All segments of the program are based on specific objectives. In the area of reading skills specific objectives cluster under the following major objectives:

1. Students will improve oral communication skills in order to facilitate reading.

2. Students will improve comprehension of written materials.

3. Students will improve reading rates.

4. Students will improve ability to obtain specific information through reading.

5. Students will function in two languages.

6. Students will identify bicultural purposiveness.

Objectives relating to language skills are divided into three levels of language development corresponding to the three years of work at the Center. Listening and speaking skills are stressed at level I (basic), with only one-fifth of classroom time spent on reading and writing. Level II (intermediate) classroom time is divided equally between listening-speaking and reading-writing skills. At level III (advanced) reading and writing skills are stressed, with about one-third of classroom time spent on listening and speaking skills. The materials at each level are progressively more difficult, and students progress from the simpler to more advanced skills.

How much student time is devoted to the program?

The Center is the total intermediate school experience for the children attending. The school day begins at 9:00 A.M. and ends at 3:00 P.M., with 30 minutes for lunch.

What materials are provided?

The Center employs traditional methods of teaching in the content areas, and the materials are those found in any well equipped intermediate school. Many of these materials must be in Spanish and English, however, and TESL materials are needed in addition. A sample of the special materials follows:
TESL Textbooks:

English This Way (Macmillan)—audiolingual focus
English for Today (McGraw-Hill)—audiolingual focus
Reading Round Table (American)—reading focus
Bank Street Readers (Macmillan)—reading focus
Miami Linguistic Readers (Heath)—reading focus
Let's Learn English Crosswords (American)—writing focus
Guided Composition (American Language Institute)—writing focus

Spanish Textbooks:
Matematica (Laidlaw)
Una Mirada al Pasado (Laidlaw)
Adventuras Por Mundos Oesconocidas (Laidlaw)
Nuestro Mundo Maravilloso (Laidlaw)
America Todos (Rand-McNally)
Proteccidn de la Salud (Laidlaw)
Por Esos Caminos (Laidlaw)
Comedias Interpretadas (National Textbook)

How open is the program to supplementary and teacher-made materials?

The program is not only open to teacher-made materials, such materials are quite necessary. The Center staff has developed many of the materials used there. In some areas, e.g., science, no adequate materials existed. In other areas where commercial materials were available, the staff preferred to develop their own so that they would be relevant to the lives of their particular children.

What student assessment materials are provided or suggested?

Diagnosis and prescription are part of each level of the TESL program. Children are initially placed on the basis of the Dade County written test and an oral test. Textbook and teacher-made diagnostic tests are used throughout. There is a clearly defined objective and a written evaluation procedure for every lesson taught. Student diagnostic profiles are established with the *Michigan Oral LANGUAGE Predictive Test*.

Classroom Activities

How are classrooms organized?

Classes are small with a teacher-pupil ratio of about 1:15. Pupils are grouped by proficiency level in English but are otherwise ungraded. Extensive use is made of diagnostic-prescriptive procedures. Students are placed and monitored,with diagnostic and subject matter tests given frequently. Content courses are taught with traditional methods whether in Spanish or English. TESL has an internal structure and methodology of its own described below.

How are the materials used?

The TESL techniques used to promote facility in English are (1) specially developed "dialogs," (2) patterned practices, (3) structure drills, (4) directed conversation, (5) substitution drills, (6) role-playing and dramatics, (7) special language games, and (8) the use of commercial materials such as flash cards, *Peabody Language Development Kits*, and a Language Master. Many of the materials used in the TESL classes were developed by the Center staff. Examples written for the Basic Level follow:

1. Introduction of grammatical patterns to be taught.
Interrogative forms: Who, What, Where, How, When
Present progressive: -ing
Illustrative dialog: Margarita: Hi Rafael. Where are you going?
Rafael: I'm going to the ball park.
Margarita: What are you going to do? etc.

2. Structure drills include several repetition drills and substitution drills. In a repetition drill, the student repeats after the teacher. In a substitutions drill, the student completes sentences by supplying correct grammatical structures and learned vocabulary.
Example of a repetition drill:

I am playing in the park.
You are playing in the park.
He is playing in the park.
She is playing in the park.
etc.
Example of a multiple substitution drill:
I am playing in the park.
. . . in the school yard. (Class: "You are playing . . . ")
He . . . (Class: ". . . is playing in the school yard.")
They . . . (Class: ". . . are playing in the school yard.")

3. Directed conversations are between two class members directed by the teacher:

Teacher: "Rafael, ask Margarita where she is going."
Rafael: "Margarita, where are you going?"
Teacher: "Margarita, tell him you are going to the park with your brother."
Margarita: "I am going to the park with my brother."

Are teacher supplements used?
The center employed two bilingual Teacher Aides who assisted the teachers in preparing bulletin boards, correcting papers, record keeping, and supervising children. A School-Community Representative acted as liaison between the school and home, visiting parents to work with them on school and health problems, and arranging visits to the school.

How is student progress assessed?

Content area assessment was primarily through teacher-made tests and the *Metropolitan Achievement Tests* given in both languages. TESL has diagnosis and prescription built into each level. Much student progress assessment depended on small classes and close teacher-student relations

Requirements and Provisions

Are special facilities needed or suggested?

The center originally operated as a "school-within-a-school" using facilities in an elementary school. They now have their own building, a former parochial school acquired on a rental basis. No other special facilities are required.

Is special equipment needed or suggested?

No special equipment is needed.

Is in-service training needed or suggested?

The Center conducts an active in-service training program, but of a type which is desirable in any school. In-service training by staff amounts to about 50 hours per year. In addition, central office consultants periodically offer special sessions.

What is the cost of implementing the program?

Most of the cost for the Center is for professional salaries which are above average due to the small teacher-pupil ratio and specialized staff personnel. Total budget in a recent year was for $116,570, yielding a per pupil cost of $1457 for each of the 80

pupils attending. Of this money, Chicago Public Schools furnished 16 percent, the remainder coming from Titles VII and I.

Program Development and Status

How was the program developed?

The program was established during the 1968-69 academic year as the Lafayette Bilingual Center. The Center's program was fully implemented with developed materials and six bilingual classroom teachers by 1969-70. During its operation, the objectives of the program have not changed appreciably, but have evolved toward a more truly bilingual program, with increasing emphasis on the teaching of the Spanish language and culture to both Spanish-and-English-speaking children.

What is the present status of the program?

The program has met with considerable sucess and has attracted national attention. It was chosen as a Model Program in Compensatory Education by the National Center for Educational Communication, and as one of five programs presented in "Information Capsules" by the Right to Read Effort. The program has moved from its original "school-within-a-school" format into a building of its own.

Program Evaluation

How has the program been evaluated?

Evaluation components have been built into the program from its inception. In addition, the Center was one of several programs evaluated by the American Institutes of Research in 1969-70. These evaluations focused on the Center's effect on student aptitude, achievement, and level of anxiety. Pre-and post-tests are administered at the beginning and end of the school year. Although the Center would prefer to use a control group design, such an evaluation is not possible since the Center accommodates all of the children in the category of interest. Consequently, scores are compared to norms where appropriate.

The Center staff believed that the bilingual program would enrich the experiential background of the children to a degree that would be reflected in ability test scores. Spanish editions of two tests of ability, the *Short Test of Educational Ability* (STEA) and the *Test of General Ability* (TOGA), were given at the beginning and end of the academic year 1969-70. Statistically and educationally significant gains were made.
The children were administered the Elementary Level of the *Metropolitan Achievement Tests* in English and a Spanish translation of the Intermediate Level. Statistically significant gains were reported for all subtests of both tests, with most of the gains of a magnitude equal or better than the eight months separating pre-and post-tests.

A comparison of the gains made on the Spanish and English versions of the MAT is particularly interesting. In terms of Word Knowledge, Reading, and Arithmetic Problem Solving, mean gains were essentially similar for the two languages. Therefore, the Center's students made similar achievement gains in both Spanish and English, with their absolute levels remaining higher in their native language.

In summary, the results of the evaluation conducted by the American Institutes of Research showed that the program at the Center had resulted in (1) increases in ability as measured, (2) educationally significant gains in Spanish reading and Arithmetic problem solving, and (3) educationally significant gains in English reading, spelling, language, and arithmetic problem solving. The attempts to evaluate non-cognitive factors were unconvincing.

What are the indicated strengths and limitations of the program?

The program achieved its objectives to a very large degree. Only additional time will tell if the major goal is achieved—that the Center graduates complete high school and go on to college in significant numbers.

Useful Information

Where can the program be obtained?

The Bilingual Center is located in Chicago, Illinois.
For additional information, contact:

Miss Natalie Picchiotti, Director
Juan Morel Campos Bilingual Center
1520 No. Claremont Avenue
Chicago, Illinois 60647

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Listen Look Learn

Summary

Educational Development Laboratories calls its program, *Listen Look Learn*, a "multi-media communications skills system" and presents an impressive array of research evidence to back up its claim. The program does integrate instruction in the communication skills of looking, listening, reading, writing, speaking, etc., but its primary focus is on reading. *Listen Look Learn* is an eclectic program which organized several approaches to teaching reading into a systematic format using an ungraded, continuous progress approach.

Instruction is organized into cycles, each of which contains several parts requiring a variety of activities. From readiness to independent reading, the child progresses through 120 such cycles. Much instruction is self-paced and individualized, but many group activities, games, and teacher-directed whole class activities make the program format extremely varied. Educational Development Laboratories has conducted and published a research program which can serve as an example to other publishers. The published research presents impressive evidence that *Listen Look Learn* is a program which can work very well.

Nature of Program

For whom is the program designed?

The program is ungraded but designed to teach basic communication skills at the elementary school level to all children.

On what rationale was the program designed?

The developers of the program have used a systems approach to bring together the findings of research and modern classroom practice. Reading is taught in conjunction with writing, speaking, and listening in integrated lessons. Considerable attention is devoted to the development of the perceptual skills seen as undergirding communications. The program is individualized to permit each child to learn at his own level and rate. Skill development is sequential and controlled, but without the restrictions on vocabulary and content associated with basal programs. The program seeks to develop independent learners capable of self-direction, who accept responsibility for their own learning and approach it with positive attitudes.

What are the general goals and objectives of the program?

The general goal of the program is to provide a complete learning environment which will allow individualized instruction to occur in the basic communications skills. Learning is self-paced and independent to a large degree and employs a multi-media approach.

Organization and Materials

How is the program organized?

The program is organized as an ungraded, continuous progress system extending from readiness training to independent reading. The basic unit of organization is the cycle and 100 cycles plus the readiness materials make up the total program. Each cycle is designed to provide mutually reinforcing experiences within a sequence of introduction, practice, application, evaluation, and extension activities,. Positive attitudes toward reading are enhanced by prior teaching of the concepts, vocabulary, and word attack skills required by the reading within a cycle. A typical cycle consists of four parts focusing on a particular cluster of skills and experiences. Part I contains activities designed to increase perceptual accuracy and visual efficiency. Part II builds the experiential background necessary to understand the language and concepts which are encountered in the cycle. Part III concentrates on skill building in the areas of vocabulary, comprehension, values, and concept. Part IV requires application of the skills in reading, writing, listening, observing, and manipulating activities. Linearly the program is divided into five major stages: Readiness, Pre-Reading Cycles 1-3, Cycles 4-20, 21-40, and 41-100. Each stage is designed specifically for children functioning at that level.

What specific objectives are involved?

Listen Look Learn is a tightly structured program with specific objectives underlying each part of each cycle with sequences progressing from simple to complex. Pre-Reading Cycles 1-3 are organized for twenty-one days of instruction. The child is introduced to the program and reading experiences are begun immediately with a sight word vocabulary of 25 words. Word analysis is introduced by teaching the child some initial consonants and endings. Cycles 4-20 are organized into five-day cycles each of which culminates with the reading of a booklet. Sight word vocabulary is increased to 360 words. Initial consonants are taught within a substitution context, and the structural skills of adding endings and combining words into compound words allows the child to read an additional 225 words. During Cycles 21-40, the instructional period is shortened to four days per cycle. Anthologies include specific stories and poetry for each cycle, and independent reading is provided by the Carousel Books. Sight vocabulary is increased to 805 words, and word analysis training allows the decoding of an additional 450 words. Structural analysis taught in these cycles includes consonants, and blends in initial and final positions, contractions, endings, and syllabication. Cycles 41-100 promote independent reading skills by teaching basic word attack strategies using context, consonsants, endings, and vowels. Comprehension training aims at flexible reading for different purposes. Sight vocabulary is added at about 25 words per cycle.

How much student time is devoted to the program?

The program is designed to be used on a daily basis but lends itself to varying patterns of use.

What materials are provided for the student?

The program employs a multi-media approach which is materials-rich. Among materials provided for students are workbooks, filmstrips, various worksheets, story cards for sequencing, games of various levels, films, Aud-X and cassettes and filmstrips, Flash-X materials, Controlled Reader Study Guides, samples and anthologies, a classroom library, a study skills library, Student Reading Records, recorders and tapes.

What materials are provided for the teacher?

Materials provided for teachers include a manual overviewing

the system, scope and sequence and performance objective bulletins, lesson plans for each cycle, and a variety of instructional equipment and associated software.

How open is the program to supplementary and teacher-made materials?

Supplementary materials can and should be used with the program and suggestions for activities are included.

What student assessment materials are provided or suggested?

Many of the materials used in the program provide immediate feedback to the student. In addition, each cycle has two assessment and reinforcement instruments called My Skill Sheets which are designed to assist the teacher in assessing the contents of that cycle. "E sheets" are used to evaluate student progress. If a child has not adequately mastered certain skills, "R sheets" are provided for additional reinforcement.

Classroom Activities

How are classrooms organized?

Classes can be of the size normal to the district and may be heterogeneously grouped. Individual and small group work is organized around the use of audiovisual equipment, games, and seatwork. Larger groups and the total class meet together for a variety of teacher-directed activities.

How are the materials used?

Children progress through components of the cycles at their own speed, but children studying with the same cycle are grouped together. Much of the instruction involves self-instructional seatwork, games, or machine-based materials on which students work independently. The teacher acts as resource person, leads certain teacher-directed activities, and monitors student progress. The *Teacher's Guide* is a source book of ideas on activities associated with each cycle.

Are teacher supplements used?

The program makes relatively heavy use of machines. Teacher aides and paraprofessionals are not required but would be useful.

How is student progress assessed?

Student progress is assessed individually through the use of the E and R My Skills Sheets. The E Sheet is divided into four sections, each of which assesses a different skill. If a child does well on all four sections, he proceeds to the next cycle. If difficulties are encountered, he is given additional instructions with the R Sheets. This instruction is administered by the teacher and serves as an additional assessment.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

Most regular school facilities can be used with only minor changes. Classrooms must be organized to allow for individual, small group, and total class areas, but this in practice may require no more than a preference for tables over individual desks. Ideally, the facilities should create the feel of a learning environment organized around eight activity stations defined by seating arrangements and the machines involved.

Is special equipment needed or suggested?

Specially developed audiovisual equipment is a necessary component of the program. Included are a special hand-held tachistoscopic device called Flash-X, special projectors for tachistoscopic and controlled reader applications, and tape recorders used in auditory training. In addition, the usual array of audiovisual equipment is used in many adjunct activities.

Is in-service training needed or suggested?

Some familiarizations with program equipment and materials is necessary.

What provisions are made for special training of teachers?

Educational Development Laboratories maintains a demonstration classroom in Parlin, New Jersey. A *Listen Look Learn* consultant aids the school in the installation and initial implementation of the program and is available to help teachers thereafter.

What is the cost of implementing the program?

Costs for implementing the program will vary depending on local decisions and existing resources. Educational Development Laboratories estimates that start-up costs range from $3,000-$6,000 per classroom with annual maintenance and replacement costs of $500-600 thereafter.

Program Development and Status

How was the program developed?

Educational Development Laboratories has for some years pioneered in research and development of equipment and materials for the teaching of reading. *Listen Look Learn* is the result of a systematic effort to build a comprehensive communication skills program taking full advantage of the multimedia potential represented by the developed equipment. A full scale review of research and practice in learning theory and curriculum development was used to establish program objectives. The program which evolved to meet the objectives was the product of much genuine field testing and evaluation. Educational Development Laboratories has prided itself on its attention to research, and regularly publishes its findings in research bulletins.

What is the present status of the program?

The program is fully operational and available through McGraw-Hill. Research, evaluation, and revision of the program is continuing.

Program Evaluation

How has the program been evaluated?

Educational Development Laboratories has maintained an active program of product evaluation which has contributed importantly to product development, and leaves little doubt that *Listen Look Learn* can be an effective program. Numerous formative and summative evaluation studies have been published demonstrating product effectiveness at several levels and under several conditions. These studies give every evidence of honesty (except for graphing practices which tend to inflate the apparent magnitude of differences) and could serve as models for other publishers. A variety of measures ranging from standardized test results to surveys of teacher and student opinion is used, and control group designs are commonly employed. The program has been evaluated in normal and corrective reading applications. Separate studies of corrective reading applications were made with urban, rural, and suburban underachieving children.

In general, results of analyses of standardized test scores favor students studying under the *Listen Look Learn* program over students enrolled in a variety of basal programs. One such study (Brickner, Scheier, and Senter, 1970) compared students in twelve *Listen Look Learn* classes with students in twelve control classes. Students in both groups were divided into three ability levels on the basis of the *Otis Lennon Mental Ability Test*, and analyses were made of scores on the *Stanford Achievement Test* and the *Cooperative Primary Test, Listening*. Results significantly favored the program's students at all levels, as shown in Table I.

Table I

Summary of Mean Scores of Ability Groups on Stanford Achievement Tests and Cooperative Primary Test, Listening

	Stanford Achievement Tests			Cooperative Primary
	Word Meaning	Paragraph Meaning	Word Study Skills	Listening
High	26.97	42.76	44.51	44.79
LLL Aver	19.28	30.82	33.63	40.77
Low	13.57	20.75	26.80	32.63
High	21.47	35.50	39.65	43.30
Control Aver	14.61	23.03	31.62	37.12
Low	9.07	14.28	23.00	30.53

When students who had studied for two years under Listen Look Learn were compared with those who had studied under the program for one year and the control group, the two-year students surpassed the one-year students, and both groups exceeded the control group. These findings are fairly typical of the reported evaluation studies.

What are the indicated strengths and weaknesses of the program?

Listen Look Learn is an eclectic program which brings together in a systematic format the strengths of a variety of approaches to reading instruction. A major unique quality is the variety of audiovisual equipment utilized as central components of instruction. While the value of tachistoscopic and controlled reader instruction has been theoretically debated for many years, there is little doubt that such equipment contributes to student interest and motivation—not a small contribution, by any means. The program is organized within its own systematic logic in ways which should be highly supportive to teachers planning individualized programs, but is not so lightly structured that the teacher's role is reduced to manual reading.

Useful Information

Where can the program be obtained?

Listen Look Learn is produced and marketed by Educational Development Laboratories/McGraw-Hill Book Company. Information concerning the program can be obtained from:

Educational Development Laboratories
3145 Bordentown Avenue
Parlin, New Jersey 08859
(202) 721-3917

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Programed Tutorial Reading Project

Summary

The Programed Tutorial Reading Project of Indianapolis, Indiana provides supplemental instruction on a one-to-one basis to children who are having difficulties in learning to read. The project tutors are paraprofessionals who are trained in a tutoring procedure which is tightly prescribed, yet flexible in its ability to adjust to the needs of the child. Programed tutoring is a teaching technique which is adopted to the reading program being used in the classroom. It is a highly individualized systematic technique for teaching the skills involved in sight reading, comprehension, and word analysis. The tutor's role is controlled by operational programs which specify in detail how the teaching is to be done and by content programs which specify what is to be taught and the order of presentation. In the Indianapolis setting, over 200 children labeled as slow readers, problem readers, and non-readers are tutored for 15 minutes a day as a supplement to classroom teaching. Evaluations of this program show that such tutoring produces significant educational gains with many of these children performing at normal or superior levels following tutoring.

Nature of the Program

For whom is the program designed?

The program is designed for beginning readers at the primary level who are experiencing difficulty maintaining the learning pace of the normal classroom instruction. The schools in the Indianapolis project all qualify for Title I support and have high proportions of economically disadvantaged children.

On what rationale was the program designed?

The program is designed to provide individual help to children learning to read before they develop serious reading problems. Paraprofessionals are trained to present practice materials to each child. The program makes use of a specified format, frequent and immediate feedback to the learner, and individualized pace. Practice proceeds making use of minimal clues at first, followed by increased prompting until the learner can make the correct response. In this way, the program presents a form of guided discovery learning on items the child does not know initially, and eliminates unnecessary practice on the items the child already knows. Programed tutoring emphasizes success, and incorporates the success orientation in its teaching techniques.

What are the general goals and objectives of the program?

The goal of the program is to improve children's reading achievement through a program of preventitive tutoring, rather than later remediation.

Organization and Materials

How is the program organized?

The Programed Tutorial Reading Project includes "content" programs and "operational" programs. The "content" programs present the content to the learner and tell the tutor the sequence of items and lessons. They tell the tutor *what* to teach. The operational program tells the tutor *how* to present the items and lessons. Thus the project materials tell the tutor what to teach and how to teach it.

What specific objectives are involved?

Nine different *item* programs are used in the lessons. Each item program has a specific objective. The item programs are:

sight reading
free reading
instruction comprehension
question comprehension
statement comprehension
logical comprehension
story comprehension
word analysis comprehension

How much student time is devoted to the program?

Students devote one or two 15-minute sessions a day to supplemental tutorial instruction.

What materials are provided for the student?

Sight reading material is taken from basal reader series. The Ginn series and the Macmillan series have been used with programed tutoring.

What materials are provided for the teacher?

Programed items and a programed lesson tell the tutor how to use the sight reading, comprehension, and word attack materials. Sight reading is tutored from the basal reading series in use in the classroom. Comprehension and word analysis are tutored from special books included in a tutorial package. Separate tutorial packages have been prepared for the Ginn series and the Macmillan series. A *Tutor's Guide* contains detailed instructions for the operational programs the tutor must learn. A master list presents the sequence of lessons. A pupil's record sheet and alphabetical word lists are included in the tutor's materials.

How open is the program to supplementary and teacher-made materials?

It is not expected that paraprofessionals will add to the program materials.

What student assessment materials are provided or suggested?

Student assessment and re-teaching techniques are built into the item programs.

Classroom Activities

How are the classrooms organized?

Selected pupils leave the regular classroom to work with a tutor. Each tutor works with one child at a time. Sight reading items, comprehension items, and work attack items are presented in cyclical fashion until a lesson is complete.

How are the materials used?

A set of 15 or fewer items make up a lesson. Items may consist of a phrase, a sentence, or a paragraph. Tutoring procedures include presentation and review of the lesson items. On the first run, all items in the lesson are presented. On later runs the tutor presents the items missed on the preceding run. When the last item is completed, the process is repeated until the child makes a completely correct run through all items, or until 10 runs are made. The tutor and child then begin work on the next lesson. When the series of sight reading items are completed, the tutor begins work on items which teach comprehension or word analysis. The process is repeated throughout the year.

Are teacher supplements used?

The program is designed for papaprofessionals. The paraprofessionals give supplemental practice and instruction to pupils who need additional help in reading.

How is student progress assessed?

Each of the nine item programs has a series of test and teaching steps through which the tutor and child must progress. The item program for sight reading, for example, contains five steps. First the child is asked to read the item from his primer or reader. If he reads it correctly, he is praised and asked to read the next item in the lesson. However, if he reads it incorrectly, he is taught any words he has read incorrectly. Then he is asked to read the complete item again. If he misses any words, a new procedure is used to teach the words, and he is once again asked to read the complete item. Any errors are recorded by the tutor, and the child proceeds to a new item. This procedure is repeated until the child has completed a number of sight word lessons. The tutor then proceeds to work on comprehension items, and then word attack items. Items which the student does not complete without error during the reteaching procedures are repeated at a later time. Every two weeks the tutor makes a report on the child's progress to the classroom teacher.

Implementation Requirements

Are special facilities needed or suggested?

The tutor usually meets with a child outside the classroom. Any area free from the distractions of people passing by, such as a separate room, a lighted cloakroom, or a carrel in the hallway is suitable for tutoring.

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Is special equipment needed or suggested?

No special equipment is needed

Is in-service training needed or suggested?

In-service training is necessary for teacher supplements.

What provisions are made for special training of teachers?

There is no special program provided for teachers.

What provisions are made for training teacher supplements?

Tutors receive 18 hours of group instruction as well as on-the-job supervision. Twelve hours of group instruction is pre-service training, and is matched by 12 hours of related study at home. The other six hours of training occur during the first two months of tutoring. Detailed suggestions for tutor training are included in the supervisor's manual.

What is the cost of implementing the program?

The program budget for 1969-70 was $237,162.12. This included a supervisor, 6 tutor consultants, 86 tutors, clerical supplies, and instructional supplies. Per pupil cost ranged from $150 to $175 per pupil.
The materials for the tutor cost $20 a set. Each tutor works with 15 children, bringing initial per pupil costs for tutoring materials to $1.33 a child. These materials last from three to five years.

Program Development and Status

How was the program developed?

The program was developed over several years by Dr. D.G. Ellson of Indiana University, and was initially tried in Indiana Public Schools in 1965. The success of the program led to its gradual extension as materials and procedures developed. In 1966-67, approximately 800 students were being helped by 78 tutors in 30 schools; by 1967-68 student numbers had grown to 1200. Initially restricted to first-graders, program materials were developed to include second- and third-grade work. The program was chosen as a model elementary compensatory education program by the U.S. Office of Education for its 1969 *It Works* series and as a model program in reading for dissemination by the National Center for Educational Communication. Funds were provided for the packaging of materials for dissemination and for the maintenance of a Visitation/Technical Assistance Center to aid districts interested in replicating and adopting the program.

What is the present status of the program?

The University of Indiana project under Dr. Ellson is continuing to evaluate results and to develop and revise materials. Most recent additions are a remedial program designed for grades 4 through 6. Under development is a programed tutorial mathematics program and a gaming approach to mathematics instruction.

Program Evaluation

How has the program been evaluated?

During 1965-66, four experimental groups of 43 children each were paired with matched controls in the same classrooms, who received no tutoring. The experimental groups included programed tutoring and direct tutoring (the traditional form of individual instruction). Each tutoring approach included children who received one session a day and a second group who received two sessions a day. Of the four treatment groups, only the group of children who received programed tutoring for two sessions a day were found to be generally superior to its control group. On raw score measures of the Ginn sub-tests (vocabulary, comprehension and word analysis) the two-session, programed tutorial children's group mean score was statistically superior to the control group's at the .01 level. Differences between the mean scores of the programed tutorial group and the direct tutorial group were significant at the .01 level. These differences favored the programed tutorial groups on the Ginn Tests, the Alphabet test, and the total reading score on the *Stanford Reading Test*. A follow-up study in 1968-69 involving 1200 children using programed tutoring based on two basal series, Ginn and Macmillan, showed similar results for programed tutoring. Children tutored in the Ginn material and children tutored in the Macmillan material made roughly equivalent gains.

What are the individual strengths and weaknesses of the program?

Programed Tutorial Reading takes advantage of the growing use of paraprofessionals in the schools, and seeks to use them with maximum effectiveness. The program therefore, has the advantages of greater individualization and interaction with the community for which paraprofessionals are used. By providing a carefully constructed instructional program and training for paraprofessionals, the program eliminates many of the difficulties sometimes encountered in less-structured uses of paraprofessionals. The role of the paraprofessional in relation to the teacher and the curriculum is delineated. The responsibility for training and supervising the paraprofessional is not added to

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the teacher's duties. The paraprofessional is provided with a clear idea of his duties and their importance and is given training adequate to become a valued member of the school community.

Useful Information

Where can the program be obtained?

Additional information about programed tutoring can be obtained from:

Mrs. May Nelson, Supervisor
Programed Tutorial Reading Project
Visitor Technical Assistance Center
Indianapolis Public Schools
901 North Carrollton
Indianapolis, Indiana 46218
(317) 637-1437
or
Dr. D.G. Ellson
Department of Psychology
Indiana University
Bloomington, Indiana 47401

References

Indianapolis Public Schools, *Visitor Technical Assistance Center, A Programed Tutorial System.* Indianapolis: Indianapolis Public Schools, n.d.

National Center for Educational Communication. *Programed Tutorial Reading Project, Indianapolis, Indiana.* In *Model Programs, Reading* Series. Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, 1972. (OE-30030).

U.S. Office of Education. *Programed Tutorial Reading Project, Indianapolis, Indiana.* In *It Works* Series. Washington, D.C.: Division of Compensatory Education, U.S. Office of Education, U.S. Department of Health, Education, and Welfare, n.d. (OE-37029).

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Project Conquest

Summary

Project Conquest is a program which combines systematic in-service training in diagnostic-prescriptive teaching with comprehensive remediation of reading problems. Capable disadvantaged children in grades 1 through 3 whose progress in reading is not satisfactory are referred to reading rooms for remediation which is correlated with regular classroom instruction. Children in grades 4 through 6 who are experiencing difficulties in reading are referred to reading clinics for diagnosis and remediation.

Remediation at the reading clinics is the responsibility of regular classroom teachers who spend a year in full-time in-service training under the supervising teacher. Following a year at the clinics, the trained teachers spend an additional year as reading room staff before returning to the regular classroom.

Nature of Program

For whom is the program designed?

The program is designed for capable disadvantaged children in grades 1 through 6 who cannot be helped by the regular classroom teacher.

On what rationale was the program designed?

The program is eclectic in nature combining remedial reading techniques at grades 1 through 3 with a reading clinic approach with children in grades 4 through 6. Emphasis in the remedial reading rooms is on a diagnostic-prescriptive supplemental reading instruction coordinated with the regular classroom instruction. Children still requiring help in grades 4 through 6 are given further remediation based on psychological assessment.

What are the general goals and objectives of the program?

The three primary objectives of the program are (1) to raise the reading ability of mentally able disadvantaged children to the point where they can function successfully in the regular classroom, (2) to improve their self-concepts and academic aspirations, and (3) to train regular classroom teachers in remedial reading techniques.

Organization and Materials

How is the program organized?

The major components of the program are reading clinics and reading rooms. The clinics serve as diagnostic and remediation centers for children in grades 4 through 6. Each clinic is staffed by one supervising teacher and three teachers selected from regular classroom duties for a year of full-time in-service training. Each teacher meets with six children during each of five 45-minute periods Monday through Thursday. Fridays are devoted to visiting and coordinating with the classroom teachers of the children. The children attend twice weekly.

The instruction in the reading rooms is conducted by two teachers who have been trained in the clinic the previous year. A supervising teacher oversees the work of several reading rooms. The instruction is diagnostic-prescriptive and is supplemental to the reading instruction in the regular classroom. The children work on the same materials in both settings, and the work is carefully coordinated. Children in grades 1 through 3 in need of supplemental instruction attend four days weekly.

Project Conquest students attend a special two-week summer camp where a variety of activities further reinforce the program. Parents are encouraged to become involved in the program through special lessons on home helps, trips, dinner meetings, and the like.

What specific objectives are involved?

Diagnostic-prescriptive methods are used throughout the program with specific skills keyed to standard prescriptive materials. Original diagnoses include physical, visual, and hearing examinations in addition to specific language skills. Emphasis within the reading rooms is on language skills important to reading. At the clinics, in-depth clinical screening is employed in an effort to define the precise nature of the child's disability.

How much student time is devoted to the program?

Children attend the reading rooms during four 45-minute periods a week. Training at the clinics is given twice weekly for 45 minutes.

What materials are provided?

A wide variety of materials is available to the teachers in both the reading rooms and clinics. In general, the same materials are used in both settings. Among the materials used are:

Materials and Equipment	*Source*
Conquest Reading	McGraw-Hill
Magic World of Dr. Spello	McGraw-Hill
Programmed Reading Series	McGraw-Hill
New Reading Skill Series	Charles E. Merrill
Reading Skill Builders	Readers Digest
Classroom Reading Clinic Kit	Webster
SRA Reading Lab	Science Research Assoc.
Dolch Games	Garrard
Language Master	Bell & Howell
Tachistoscope	Various
Listening Lab	Various
Controlled Reader	Educational Development Lab
Shadowscope Reading Pacer	Psychotechnics

How open is the program to supplementary and teacher-made materials?

In general, commercial materials of a variety of types are employed. The program is quite open to any materials the teachers find useful, however.

What student assessment materials are provided or suggested?

Initial referral to a reading room or clinic draws upon several assessment areas. Reading level is determined by the *Gates MacGinitie Reading Tests* and/or *California Achievement Test* and by teacher judgment. The student's school history and current status are noted. Intelligence test data and further information on reading are determined. Among the additional tests used are the *Slosson Oral Reading Test*, the *Silent Reading Diagnostic Test*, the *Kottmeyer Spelling Test*, the *Silvaroli Sight Vocabulary Test*, and an Informal Reading Inventory developed by the staff. The student is also checked for physical problems including hearing tests conducted by a technician, and visual screening by the Titmus Optical School Screener. Other instruments are used as needed for diagnosis. Prescription and assessment of learning is based on a skills outline keyed to a variety of materials and associated assessment procedures.

Classroom Activities

How are classrooms organized?

Both reading rooms and clinics operate with a teacher/student ratio of 1:6 and in 45 minute time blocks. Children attend the reading rooms four times weekly and the clinics twice weekly.

How are the materials used?

Both reading rooms and clinics use techniques designed to prescribe for each child's unique needs in such a way as to make success assured. Typical instructional sequences for the two centers are as follows:

Reading Room (Grades 1-3)
Phonics (12 minutes)
Basal Textbook (15 minutes)
Programmed Reading (10 minutes)
Oral reading, or games, or special devices (10 minutes)

Reading Clinic (Grades 4-6)
Programmed Reading (5 minutes)
Basal Textbooks (10 minutes)
Dictation (10 minutes)
Oral reading, games, or special devices (10 minutes)

Are teacher supplements used?

Both mechanical devices and programmed materials are available for individualization aids. A teacher aide is assigned to each clinic to assist teachers in non-instructional aspects.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The facilities available in most schools would suffice for the program with little modification. Rooms must facilitate individualization of instruction with study carrels and the like. Storage areas must also be readily available in each room.

Is special equipment needed or suggested?

The program requires the variety of special equipment used in the clinical diagnosis and remediation of reading disabilities. What specific equipment is necessary or useful can vary between programs.

Is in-service training needed or suggested?

While the program has as its first purpose the remediation of reading difficulties, perhaps its most unique feature is the systematic in-service training of regular teachers in the district in diagnostic-prescriptive instructive procedures. The program is an in-service training program essentially.

What provisions are made for special training of teachers?

Classroom teachers without training in individualized reading techniques are relieved of regular duties for a full year and assigned to the reading clinics. The in-service training received during their year at the clinic allows them to spend the following year as a reading room teacher or to return to their schools as disseminators of diagnostic-prescriptive techniques.

Training at the clinics begins with a two-week workshop held before the opening of school. Teachers are introduced to materials and equipment, remedial techniques, and approaches to establishing rapport and enhancing self-confidence. Joint sessions with teachers and teacher aides work to build cooperative teamwork.

When the children are admitted for service, in-service training becomes a continuous process. The supervising teacher monitors the instructional activity and makes suggestions for additional approaches. Joint meetings for all reading personnel are held on a weekly basis throughout the year. At these sessions new techniques are discussed and demonstrated, critiques of videotaped sessions are held, and reading experts are invited for discussions of special topics.

The in-service program extends to regular classroom teachers. Supervising personnel conduct training in conjunction with coordinating remedial and regular classroom instruction, and teachers who have completed clinical training act as resource personnel for their schools.

What is the cost of implementing the program?

The total cost of the program depends on its extensiveness and the need for special facilities by a given district. In a recent year, Project Conquest provides services to 1089 children at a total cost of $286,524. This per pupil cost of $263 above regular district costs might vary considerably, however, depending on the specific costs of the program components in a different district.

Program Development and Status

How was the program developed?

Project Conquest began in 1965 in response to the needs of many children in the East St. Louis area. The program is financed primarily through Title I funds. The program started with the establishment of the reading clinics. Gradually, as staff and funds permitted, the number of reading clinics and reading rooms were expanded and other components, such as the summer camp, were added.

What is the present status of the program?

The program has achieved national prominence by its selection as a model program and as one of the five Right-to-Read Information Capsules.

Program Evaluation

How has the program been evaluated?

The program regularly tests children at the beginning and end of the school year using the *Gates MacGinitie Reading* Test. Evaluation is by statistical analysis of the scores of a random sample of students to determine contributions from program components and overall achievement gains compared to norms.

What are the indicated strengths and limitations of the program?

Analysis of the variance on gains made in the various reading rooms and clinics showed no consistent differences between program components. In general, findings show consistently significant gains between pre- and post-testing with gains greater than would be expected from average children during a comparable period. These findings have been replicated over several years.

Useful Information

Where can the program be obtained?

The following individuals can provide additional information:

Mrs. Bettye P. Spann, Director
Project Conquest
P.L. 89-10 Title I Project Conquest
931 St. Louis Avenue
East St. Louis, Illinois 62201
(618) 874-2074
Dr. Billy-Belle Weber, Director
Research and Evaluation
902 Illinois Avenue
East St. Louis, Illinois 62201
(618) 874-4300

References

National Center for Educational Communication. *Project Conquest*. In *Model Programs, Compensatory Education* Series. Washington, D.C: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, 1972. (OE 72-76).

Right to Read Effort. *Project Conquest*. In *Information Capsule* Series. Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, n.d.

Wargo, M.J., *et al*. "Further Examination of Exemplary Programs for Educating Disadvantaged Children." Los Angeles: American Institutes for Research in the Behavioral Sciences, 1971. (ED 055 128).

Project INSTRUCT

Summary

Project INSTRUCT (Instructional System Teaching Reading Using Continuous-process Technology) is a systems approach to individualized reading instruction for all K-3 students. The program concentrates on the work attack skills necessary to decoding. Program components include a monitoring and instructional system keyed to an array of skills, an organization system, a materials organization system, a parent involvement program, and a local adoption system. The principle of management by objectives is followed throughout. Extensive objective-by-objective evaluations have shown the program to be successful to a remarkable degree.

Nature of Program

For whom is the program designed?

The program is designed to teach work attack skills to all K-3 children.

On what rationale was the program designed?

The program is designed to insure that all children learn the word attack skills necessary to reading. It disagrees with the traditional approach which groups children by age and offers remedial help to those experiencing difficulties. By changing patterns of organization, techniques of teaching, and kinds of learning materials it seeks to monitor each child individually until the necessary skills are mastered. It believes that through the use of scientific management procedures, maximum accountability can be assured. Multisensory phonics techniques combined with management through systematic use of contingencies form the base of the program.

What are the genreal goals and objectives of the program?

The general goals of Project INSTRUCT are to improve reading achievement and prevent reading failure through individualization of instruction, to encourage efficient staff patterns, to provide an exportable system-wide model, and to work toward the development of a coordinated language skills instructional system. The systems so developed must be self-renewing and capable of adaptation to local plans under local leadership. The Continuous Progress Mastery Model is employed.

Organization and Materials

How is the program organized?

The program is organized around an array of word attack skills stated in terms of student performance. The skills begin at the readiness levels of pre-kindergarten and are arranged from simple to complex to levels of independent decoding. Associated with the skill array is a Monitoring System providing entry level tests, continuous-referenced mastery tests, and individual student profile cards. The Instructional System focuses instruction by grouping students with similar skill needs and teaches for mastery by providing alternative instructional methods. Resources are used efficiently through the Organizational System which allows students to be grouped across grades and rooms, coordinates team-teaching approaches, and provides for support staff, trained paraprofessionals and volunteers. A Materials Organization System indexes commercial and non-commercial materials to the skill array and allows for continuous updating of new commercial and locally-developed materials.

Support components include a Parent Involvement Program which incorporates a community information program and slide-tape presentation for training of parent volunteers. A Local Adoption System provides assistance to schools adopting Project INSTRUCT through training programs for Local Program Managers, and year-round consultation to adopting schools. Special components dealing with low-achieving students, and correlations with other basic language skills are being developed.

What specific objectives are involved?

Each skill on the array has an associated specific behavioral objective. The skills and their associated objectives form the heart of the program. Examples ranging from simple to complex are:

B-1b Supplying obvious words in context
Given a set of pictures of objects and simple sentences with one obvious word missing in each sentence, the student will be able to indicate the correct picture 2 out of 3 times.

F-2 Short o, sh, th, wh, ch
The student will be able to pronounce 9 out of 10 real and nonsense words of one syllable containing short a in isolation and consonant digraphs sh, th, wh, or ch in isolation and in context.

M-1 Diphthongs: oi and oy, ow and ou
Phonograms: oy, ound, ou
The student will be able to pronounce 9 out of 10 real and nonsense words containing diphthongs in isolation and in context.

How much student time is devoted to the program?

Project INSTRUCT suggests that the child receives at least two hours of instruction per week in word attack skills. The two hours need not be "teacher time" but the child should be "on task" on his particular skill need.

What materials are provided by the program?

The following is a list of materials currently available:

Materials Organization System Handbook (Recommend one per building)
A manual to be used as a guide when establishing a Materials Organization System in the local school. (This handbook was used as the training manual for the Phase II Materials Organiza-

tion Workshop held May 17, 1973 at Arnold School.
Contents include: An introduction and explanation of MOS, sources of materials used in MOS, evaluating and keying materials, four-part appendix with word lists, phonetic generalizations, glossary of terms, and syllabication, prefixes and suffixes.

Administrators Handbook (Recommend one per building)
A handbook designed to be used by local school administrator whose school is adopting Project INSTRUCT.
Contents include: History of the Project, Evaluation of collected Data, Explanation of available adoption options, Copies of Letter of Intent and Particpation in Project INSTRUCT which adopting schools complete and return to Project INSTRUCT office, and a guide for decision making at the local school level.

Local Program Manager (LPM) Handbook (Recommend two per building)
A handbook designed as an instruction and reference guide for the LPM's use in training the local staff in the Project INSTRUCT system.
Contents include: Description of the process of the implementation of Project INSTRUCT. For example, an explanation on administration of tests, the organization of skill groups, the utilization of the record keeping system, etc. are provided.

Teacher Resource Book (Recommend one per teacher)
A resource book designed to serve as a reference and a source of materials for teachers using Project INSTRUCT.
Contents include: *One student set of Entry Level Tests; One set of examiner's (or teacher's) directions with Mastery Level Tests (pre and post-tests); and a four part appendix which includes (1) definitions of terms—syllabication-prefixes-suffixes; phonic generalizations, and word lists keyed to the PI array of skills.
*Schools can make additional ditto copies of Mastery Level tests and Entry Level tests from this printed set.

Take-Home Materials for Students (Recommend one per building)
The take-home materials include one instructional activity for each skill on the array. They are designed to be sent home with the student as a means of involving parents in the student's skill instruction. (One set is needed in each building as the schools are permitted to make ditto copies from the printed copy provided in the set of Take-home materials. Take-homes are NOT intended for use as enrichment materials or seat work for skill groups by the teacher.)

Parent Assisted Learning Program Manual (Recommend one per building)
A handbook designed to be used by the LMP or parent leader to train school staff and parents in a volunteer program.
Contents include: Techniques and strategies for training, sample materials, and useful handouts.

Entry Level Test Set
Schools who make the decision to purchase PRINTED Entry Level Tests for EACH student involved in Project INSTRUCT should order the same number of Entry Level Tests as the number of students in the program. (However, ONE student set of Entry Level Tests are included in the Teacher's Resource Book which will permit schools to make a ditto copy of the ELT for each student involved in the program which would make it unnecessary to order the printed ELT.)

Mastery Tests
These are included in the Teacher Resource Book and cannot be purchased separately. (See description of Teacher Resource Book).

Student Profile Cards (Recommend one per student)
A McBee card is available for permanent record keeping of student progress in skill development.
Programmed Words—Top 500 High-Frequency Vocabulary Words (Recommend one set per building)

Programmed word worksheets provide students an opportunity to practice reading, spelling, and writing words previously introduced.
The words selected for programming are those indicated as the 500 most frequently used words in children's books as determined in the American Heritage Studey of High Frequency Words.
Schools are permitted to make ditto copies from the printed set of Programmed Words.

Set of Sample Project INSTRUCT Materials
A folder which contains sample pages of all Project INSTRUCT materials which are available for sale. Also includes descriptive literature and brochures about the Project.

Games Parents Play (And Make) Catalog
The Games Parents Play and Make Catalog is a collection of instructional game ideas which parents, volunteers, or teachers can make. Included in the catalog is a written set of directions and an illustration on how to construct the game as well as directions for playing the game. At least one activity or game has been devised for each of the skills on the PI Array. Approximately 150 games are included.

How open is the program to supplementary and teacher-made materials.

The program is totally open to locally selected and produced materials and includes suggestions for their development.

What student assessment materials are provided or suggested?

The program provides complete sets of tests to establish the entry level of each student on each skill. Criterion-referenced mastery tests are provided which are constructed for both pre- and post-instructional use and include measures of maintenance of previously learned skills. Also available in 1973-74 are new tests of spelling for all skills and a handwriting inventory for manuscript or cursive.

Classroom Activities

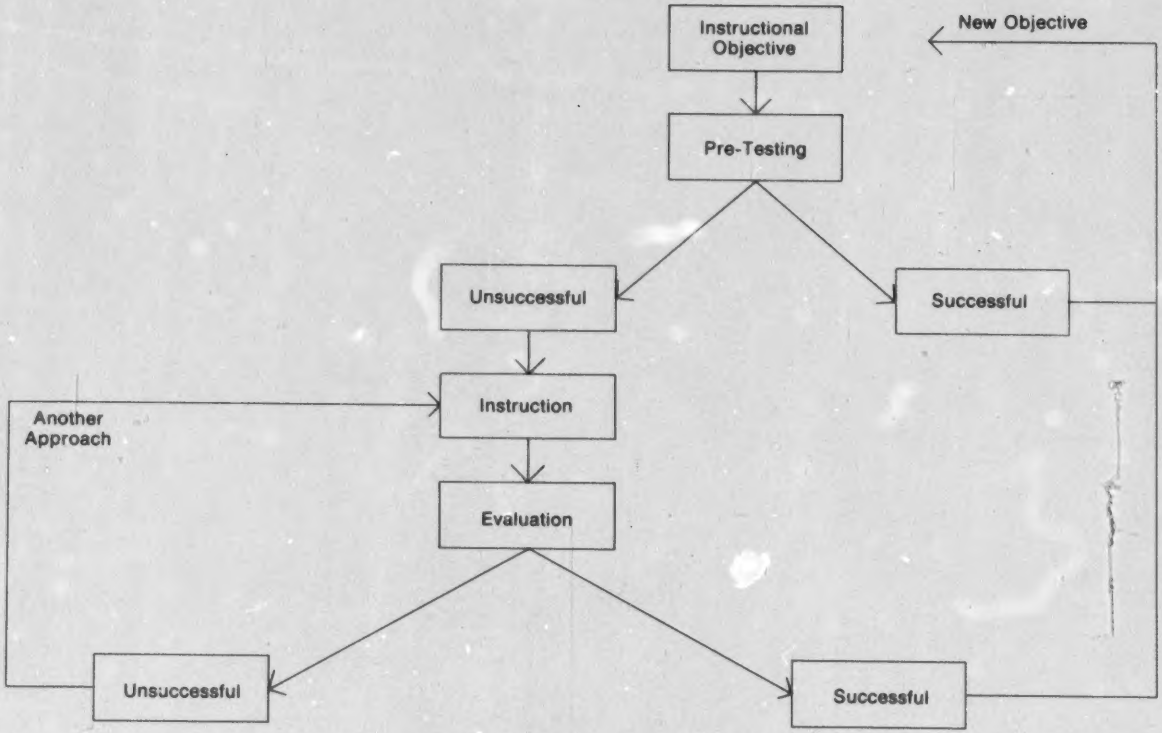
How are the classrooms organized?

Project INSTRUCT's approach to individualization is through short-term teacher-directed groups, each focused on a specific skill. The groups are formed by identifying a group of students who have not mastered a specific skill and who are ready for instruction on that skill. Within this general focusing procedure five alternative grouping strategies are provided for: 1) cross-grade grouping based on skills needs, 2) cross-room grouping within a grade level based on skills needs, 3) cross-grade reading groups formed from basal reading groups, 4) cross-room reading groups formed from basal reading groups, and 5) self-contained classrooms. The *Implementation Handbook* discusses these alternatives thoroughly, listing the advantages and disadvantages of each.

How are the materials used?

The basic instructional unit of the program is called the instructional cycle. The cycle begins with assessment of student skill needs through the entry and pre-test assessment devices. Grouping and other planning for delivery of needed instruction is the second step. The third step is the actual delivery of the instruction through various learning experiences. Finally, these instructional activities are to be accompanied and followed by an assessment of skill mastery. This cycle is represented schematically below?

Instructional Model for Mastery Teaching and Focused Instruction



Project INSTRUCT recommends that schools begin implementation of the system with regular three-week cycles, but that other strategies can be tried once a staff gains experience. Each instructional cycle should include at least two hours of teacher-planned skills instruction per week with sessions at least four times per week to insure continuity. A number of strategies are available to provide for students who achieve mastery before the completion of a cycle and for those who require additional help. The system can be used with any type of instructional methodology and materials.

Are teacher supplements used?

No additional machines, paraprofessionals, or volunteers are required for the implementation of the program. However, in recognizing the value of volunteer assistance, a program for training volunteers was developed. This program, titled Parent Assistants to Learning (PAL), was designed to train a leader who in turn is responsible for training volunteers to assist both in and out of the classroom.

How is student progress assessed?

Students are placed in the program at a point derived from Entry Level Testing. These tests are group paper and pencil tests. They are divided into five levels. Each level test is composed of subtests covering each skill. Students begin at an easy level determined by teacher judgment and work upward until two subtests within a level cannot be completed successfully.

Mastery tests require students to apply word attack skills in real reading situations and with nonsense words which insure that the student response is not based on sight vocabulary. Maintenance of skills previously mastered is tested by having skills in each cluster retested in mastery tests for the following clusters and by inserting review items at strategic points. Both group and individual tests are used to assess mastery. Since the program aims at teaching word attack skills, not phonics *per se*, mastery tests assess all aspects of word attack including use of prefixes and sufiixes, use of context, etc.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

Project INSTRUCT was designed with the specific goal of making use of facilities typically found in elementary schools. No special facilities are needed.

Is special equipment needed or suggested?

Project INSTRUCT assists schools in organizing and utilizing existing materials. While the Materials Organizing System would be useful to a district interested in purchasing or developing new materials, its primary focus is on the efficient use of existing materials. No special equipment is required.

Is in-service training needed or suggested?

In meeting the guidelines of exportability in the Title III funding, Project INSTRUCT has prepared manuals and packages of materials which explain the implementation of the program in considerable detail. In addition, the staff offers training to administrators and to the Local Program Managers (LPM). The LPM is selected by the local school for training and has the responsibility for training local staff.

What provisions are made for special training of teachers?

Training of teachers occurs at the local school level. The LPM is responsible for these training sessions. However, PI sponsors Interchange Workshops during the school year in which

teachers can come and make instructional games, require special teaching hints from fellow PI classroom teachers, and have the opportunity to interact with the PI staff. Attendance at the Interchange Workshop is voluntary.

What provisions are made for training of teacher supplements?

The LPM in the local school is responsible for training substitute teachers, and student teachers. Volunteers are trained by the PAL leader whereas the LPM and teachers train the classroom aides.

What is the cost of implementing the program?

Actual costs will depend on local options, but typical costs for implementing the word attack program (and the monitoring system for basal words, spelling, and handwriting) for a school with 300 students and 15 teachers in K through grade 3 would be as follows:

1. Developmental Costs
There are no developmental costs for Options 1 and 2. Developmental costs for Options 3 and 4 will be paid by Project INSTRUCT.

Initiation Costs
Project INSTRUCT is not a "new" program in the sense of replacing existing programs. Instead, it is a system which enables your staff to increase the effectiveness of your present reading program.

Local Program Manager Training Workshop (2 days away from the local building)	$100 plus transportation, meals and lodging
Teacher Inservice (8 hours or 1-day at the local building—may replace existing in-service)	$750 (approximately $50 per teacher)

Materials

1 Take Home Materials $1.15	$ 1.15
1 Materials Organization Handbook $3.00	3.00
1 Administrator's Handbook $1.50	1.50
1 Programmed Word Masters $20.00	20.00
2 LMP Implementation Handbooks $1.85	2.70
1 Teacher's Resource Book $1.50 per teacher	22.50
1 PAL Volunteer Program Manual $3.00	3.00
Locally reproduced Entry Level Tests .10c per student	30.00
Student Profile Cards .10c per student	30.00
1 Card Punch per school	10.00
Locally reproduced Mastery Tests .40c per student	120.00
Consulting visitation from Project INSTRUCT, 1 visit	$100 plus transportation, meals and lodging

Additional costs may be represented in these questions which must be resolved:

How many aides?
How much supervision?
How much additional teacher time for work on a Materials Resource Center?
Are new Instructional Materials for individualizing skills instruction necessary?

Approximate new initiation costs for a school of 300 K-3 students with 15 teachers $1,000.00
Maintenance Cost:

Materials approximately $.60 per student per year
Optional additional costs (depend upon local situation)

The in-service costs represented here varies greatly depending upon the size of the teaching staff and upon the extent in-service which the administrator plans for his staff. When in-service time is already budgeted into the school program, an administrator can deduct approximately $500 per teacher from the total initiation costs.

Program Development and Status

How was the project developed?

Project INSTRUCT began as a response to the call from then Commissioner of Education James Allen to make the Right to Read a priority in American education. A group of educators and parents representing the Lincoln area, the University of Nebraska, and the Lincoln Public Schools submitted a proposal to Title III for funds initiating the program. Development of the program has been a school-based operation with field-testing and development of all components.

What is the present status of the program?

At present the program is being adopted at a number of schools. Monitoring systems for handwriting and spelling are being added. In addition, the staff has developed a set of direct teaching techniques for teaching word attack drills, sight words, and spelling words. Plans for the future include possible commercial dissemination and continual development.

Program Evaluation

How has the program been evaluated?

Evaluation of the program was conducted by Selection Research, Inc. and by the Title Project Evaluator for the Lincoln Public Schools. In addition, the Validation Team selected by Title III ESEA conducted a separate evaluation for 1973-74. Evaluations have been consistently postive. For example, the Title III Validation Team gave the program an overall rating of 98 out of a possible 100 points. All aspects of the program were included in these evaluation studies.

What are the indicated strengths and limitations of the program?

The evaluation plan was organized around twenty-five objectives involving students, teachers, administrators, media specialists, and parents. The evaluation report for 1971-72 shows that seventeen of these objectives were met, while three were not, and five were inconclusive. Those objectives concerned with student achievement were generally met. The five Project INSTRUCT schools (which included three compensatory education target schools) scored higher than city-wide averages on eight of nine comparisons. Where scores were adjusted by covariance to compensate for past achievement and ability, the students in the Project INSTRUCT schools in the compensatory education target area scored higher than any other group, with project students in the non-target area scoring second highest. Differences were not large, and in some cases failed to achieve significance, but were consistently in favor of project students. Attitude surveys conducted among teachers, parents, and students reflected positive attitudes toward the project.

Useful Information

Where can the program be obtained?

Information and sample materials may be obtained from:

Mr. Carl Spencer
Project INSTRUCT Director
720 So. 22nd
Lincoln, Nebraska
(402) 475-1081

Mrs. Mary Lou Merdan
Program Director
Project INSTRUCT
720 So. 22nd
Lincoln, Nebraska
(402) 475-1081

References

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Project Instruct. "Avaluation Report, Project Instruct." Lincoln, Nebr.: Lincoln Public Schools, 1973. (Mimeographed.)

Project Instruct.*Handbook for Developing a Materials Organization System (Implementation: Phase II)*. Lincoln, Nebr.: Lincoln Public Schools, 1972.

Project Instruct. *Implementation Handbook*. Lincoln, Nebr.: Lincoln Public Schools, n.d.

Project Instruct. *Resource Notebook*. Lincoln, Nebr.: Lincoln Public Schools, 1972.

Project Instruct. *Take-Home Materials Developed for the Project Instruct Array of Skills*. Lincoln, Nebr.: Lincoln Public Schools, 1972.

Project MARS

Summary

Project MARS (Make All Reading Serviceable) was developed in Leominster, Massachusetts to provide special individualized reading instruction to children in grades 1 through 4 who evidence reading scores below their potential. The program is exemplary of the standard remedial model done well. A special remedial reading teacher works with the children in each of seven target schools. Intensive small-group instruction based on diagnostic-prescriptive techniques is employed.

Children are selected for the program on the basis of standardized reading tests, daily classroom performance, and the evaluation of their teachers. Throughout the year, 45-minute special reading classes are offered, but children are released from the program whenever staff members determine that they have reached their reading potential. Evaluation data indicate that the program is successful in improving the reading ability of the children attending.

Nature of Program

For whom is the program designed?

The program is designed for children in grades 1 through 4 who are not adequately benefitting from regular classroom instruction. The target schools are located in economically disadvantaged areas with significant numbers of Spanish-speaking children attending.

On what rationale was the program designed?

Unlike some remedial programs which attempt to coordinate special and regular instruction, Project MARS emphasizes the use of materials and techniques not employed in the regular classroom. Since the children involved had experienced only failure with traditional classroom methods, the project attempts to provide different approaches based on the individual needs of the child.

What are the general goals and objectives of the program?

The primary goal of the program is to raise the reading performance of the students to the level consistent with their potential. The program also seeks to increase academic motivation and to build positive attitudes toward reading.

Organization and Materials

How is the program organized?

Elementary schools with student populations drawn from economically disadvantaged areas were selected as target schools for Project MARS. Initially, four public schools and three parochial schools were selected. Each school selected is assigned a special reading teacher who works in a specifically designated reading area. The project is coordinated by a Project Director responsible for supervising the program, selecting materials, testing and evaluation, and individual intelligence testing. Two part-time clerks are employed for typing and routine clerical tasks.

What specific objectives are involved?

Project MARS lists its objectives as follows:

To diagnose specific reading weaknesses and to provide individualized instruction in the areas needed to improve reading performance.
To strengthen and increase the reading performance of educationally deprived children beyond the confines of the regular classroom.
To give specific vocabulary practice.
To help children acquire the habits, attitudes, and skills necessary to be successful in reading and in schoolwork in general.
To strengthen reading skills taught in the regular classroom, enabling disadvantaged children to perform on a level with their peers and maintain a positive self-image.

How much student time is devoted to the program?

Students attend one 45-minute session daily.

What materials are provided?

Following the usual practice of diagnostic-prescriptive remedial instruction, a wide variety of materials is available for selection. Included are:

Materials	*Publisher*
All Dolch Materials	Garrard Press
Word Wheels	J. L. Hammett
Sullivan Programmed Reading	Behavioral Research Labs
Phonetic Reader Series	Educational Publishing Service
Skill Builders	Readers Digest
Easy to Read Books	Scholastic Press
Revised Structural Reading Series	L. W. Singer Co.
Standard Test Lessons in Reading	Teachers College Press
Gates Reardon Reading Exercises	Teachers College Press
Round Table Easy to Read Books	Allyn & Bacon
Happy Times with Sounds	Allyn & Bacon
Websters Reading Clinic Lab	McGraw-Hill
New Practice Readers	McGraw-Hill
Reading Skill Series	Charles Merrill
Phonic Skill Texts	Charles Merrill
Fun with Phonics	Kenworthy Educational Co.
Word Blends	Kenworthy Educational Co.
Specific Skill Series	Barnell Loft
Easy to Read Series	Random House
Reluctant Reader Books	Random House
Basic Reading Series	Lippincott
Getting Ready to Read	Houghton Mifflin
Introducing English with Spirit Masters	Houghton Mifflin

In addition to the above, many games, charts, cards, and flannel boards are available. Visual and auditory training equipment includes filmstrips, tapes, transparencies, and a variety of

audiovisual equipment.

How open is the program to supplementary and teacher-made materials?

The program is totally open to materials of any useful level. Teachers are encouraged to be creative in their use of materials and to work with the techniques individually preferred. At the outset of the program, every teacher in the district was asked to describe her favorite teaching technique or activity. These were drawn together and published by the district as a reading "recipe" book.

What student assessment materials are provided or suggested?

No specific assessment materials are required by the program.

Classroom Activities

How are the classrooms organized?

Project MARS classes are assigned special areas in each building. The teachers are allowed to equip and organize these rooms in accordance with their instructional needs and individual methods. Students are released from their classrooms at definite times for 45 minutes of daily small-group instruction with their special reading teacher. Groups are composed of six or fewer students during the day. Particularly severe reading problems are remediated in half-hour sessions on a one-to-one basis.

How are the materials used?

Instructional methods and materials different from those used in the classrooms are used exclusively, but special reading teachers confer frequently with the regular classroom teachers to coordinate instruction. Most teachers begin each session with a five-minute show-andtell activity. The main instructional period is typically divided into sections concerned with skill development, oral and silent reading, and games. Teachers often create their own materials and techniques specifically for the project children.

Are teacher supplements used?

Neither volunteer aides or paraprofessionals are used in the program. A variety of machines and programmed materials were available to facilitate individualization.

How is student progress assessed?

Student assessment is left to the professional judgment of the teachers. Generally these assessment devices associated with the materials are used along with diagnostic instruments preferred by the teacher.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

It is particularly desirable to have a designated room or area for remediation. This area should contain adequate storage for a variety of materials and should be divisable into individual work spaces.

Is special equipment needed or suggested?

No special equipment is specified for the program, but a variety of teaching materials is needed.

Is in-service training needed or suggested?

The success of the remedial approach to special reading training depends to a very large degree on the competence of the special teachers. In-service training is an important component of the program.

What provisions are made for special training of teachers?

In-service training is the responsibility of the local district. Project MARS held weekly training sessions during the first two years of operation and monthly sessions thereafter. New teachers all participated in a summer reading institute and are required to do similar work every three years.

What is the cost of implementing the program?

Most of the cost of the program is devoted to teachers' salaries, so costs would vary from district to district. Costs for Project MARS averaged about $300 per student in addition to the $600 per student normally expended by the district. The added expenses were funded through Title I.

Program Development and Status

How was the program developed?

Project MARS began in 1966-67 in response to the needs of the area's disadvantaged children who were falling below grade level in reading achievement. The project used Title I funds and local district personnel to develop the program. Its general success has led to its gradual expansion into other schools in the district.

What is the present status of the program?

The remedial program developed as Project MARS is being expanded as resources and trained personnel allow. In 1973-74, two additional elementary schools will begin the program.

Program Evaluation

How has the program been evaluated?

Project MARS evaluations have focused on the extent of improvement in reading achievement made by students after one year in the program, in keeping with its objectives. The model used in the standard pre-post test model on student performance compared to national norms.

What are the indicated strengths and weaknesses of the program?

The gain scores of Project MARS students consistently exceeded or equaled gains expected of average children in regular classrooms. The program thus serves as a viable working model for those districts which prefer the remedial approach.

Useful Information

Where can the program be obtained?

Information concerning Project MARS can be obtained by contacting:

Mr. Nicholas P. Rigopoulos
Assistant Superintendent
or
Miss Geraldine Merrick
Project Director
Leominister Public Schools
Leominister, Massachusetts 01453
(617) 534-6508

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Project PLAN

Summary

Project PLAN (Program for Learning in Accordance with Needs) grew out of a massive survey of education called Project TALENT conducted in 1960 by the American Institutes for Research in the Behavioral Sciences. The program seeks to provide a computerized, structured system within which an individualized program of education can be carried out. Education is seen as having three primary functions: 1) preparing students for an occupational role, 2) preparing students for leisure time, avocational and cultural activities, and 3) preparing students to assume responsibilities in the personal, social, and citizenship spheres. The four areas of language arts, social studies, mathematics, and science were selected for initial development and some 1,500 specific objectives were listed in each of the four fields. These objectives are grouped into learning modules, each representing about two weeks of instruction. Each module has associated with it one or more teaching-learning units which lists materials to be used by the student in attaining each included objective. Assessment processes are furnished for both short and long-term objectives. Students formulate long-term goals and monitor their own learning. Clerical tasks such as test scoring and record keeping are performed by the computer.

Nature of Program

For whom is the program designed?

Project PLAN is intended eventually to be a complete educational program including instructional, guidance, and administrative components for grades 1 through 12.

On what rationale was the program designed?

Program developers believed that whereas the basic functions of American education has changed significantly over the past fifty years, curriculum and methods have not made a corresponding change. Rather than being concerned merely with providing students with the basic skills while selecting and preparing a small portion of students with the educational background needed for college, schools today are responsible for a much broader development of all students. Thus such areas as how to think, learning how to learn, and acquiring the ability to evaluate goals and their own competencies have assumed a new importance.

Project PLAN sees the student in the center of the educational process. The student must formulate his own goals, assume responsibility for his own learning, and be able to manage his own educational program. Teachers act as diagnosticians, tutors, and special resource persons. The complexities of this type of education, with the unique interaction between each student and his environment, require a massive systematic support base which is only obtainable through computerization.

What are the general goals and objectives of the program?

The general goals of Project PLAN are extensive and have been stated differently by different sources. In general, the program is designed to:

Aid the student in formulating goals and in developing the capacity to make decisions about his educational and occupational choices.
Develop personal competence by giving the student the opportunity to show initiative and creativity in countering difficulties.
Promote social development by emphasizing group relations, sensitivity to others and the ability to look at rules and customs with perspective.
Build the foundational skills from an emphasis on reading to such areas as dealing with controversial issues and self-expression.
Develop the capacity of the student to transfer his knowledge of skills, concepts, and principles to new situations.
Encourage students to become self-directed learners.

Organization and Materials

How is the program organized?

The program is based on comprehensive sets of educational objectives. The basic unit of instruction is the module which contains about five related objectives and is intended to require about two weeks of instruction. For each module alternate work assignments called teaching-learning units (TLU's) are available, designed to assist students in achieving the module's objectives by using existing commercial instructional materials. The TLU tells the student the instructional objectives, the materials to use, what to do with them, and what the teacher's role will be. There are many more objectives than any one student is expected to master. The use of modules allows the development of a unique program of studies for each student using information concerning his present mastery of objectives in the various modules and the indication of his present needs in terms of his long term goals.

What specific objectives are involved?

There are approximately 1,500 objectives listed for each program area. The objectives are stated in behavioral terms and each is designed to be attainable with two to three hours of study. No student is expected to master all objectives. Assisted by records of his past achievement, his interests, and his long range goals, the student is aided in selecting the objectives most appropriate for him.

How much student time is devoted to the program?

The amount of time a student spends on Project PLAN-directed learning activities depends on the extent of implementation of the program within the school. It is intended that all student time be so directed eventually.

What materials are provided for the student?

Instructional materials *per se* are not provided by the program but must be available to the student. The program provides the student with the TLU associated with a selected module. This describes the work assignment expected within the available materials. When a student completes a module he is provided with a Test Card for the objectives included.

What materials are provided for the teacher?

To assist the teacher, several kinds of reports are available. In grades 4 through 12 a student completes a Status Card twice a week showing what TLU step number he is working on. A printout keeps the teacher informed on student progress and lists

the students who haven't reported. In grades 1 through 3 various flag points are printed in appropriate places on the TLU's. When reached, the student receives a module flag card, prepunched with his identification number. These are collected each day and transmitted to the computer. Printouts alert the teachers to the need to organize discussion groups, to use special procedures, and that module test and quarterly and individual reports are available on request. A Teachers Supplies card brings additional copies of TLU's, tests, terminal supplies, and forms.

How open is the program to supplementary and teacher-made materials?

Teacher-made materials can be used with the program.

What student assessment materials are provided or suggested?

The major assessment tool is the test associated with each module. From five to ten items are used to test each objective so that a module typically consists of twenty-five to fifty items. Tests and test scoring are provided by the computer. Achievement tests given periodically to check retention are composed of alternate items to those on the module tests. In addition, the program provides evaluation of long-range and global objectives concerning such areas as reading comprehension, attitudes, and appreciations. For these assessments, the program often makes use of procedures other than paper-and-pencil tests.

Classroom Activities

How are the classrooms organized?

Classrooms may be organized in any way suitable to individualized instruction.

How are the materials used?

Project PLAN procedures make constant use of a computer through terminals located at the school or other nearby facility. Teachers are trained to operate the terminals and have constant access to them. Procedures are very flexible and are of a complexity necessary to support flexible individualization. The student begins with an orientation module. He and the teacher review his goals, his needs, and his program of studies. A registration card provides the computer with such necessary information as the course of studies chosen and the teachers involved. Four basic guidance information modules are assigned with associated TLU's. The TLU informs the students of the instructional objectives involved and give examples illustrating what the achievement of objectives entails. The instructional materials to be used and how to use them are indicated. TLU's are varied in the level of instructional material, audiovisual richness, level and amount of reading required, the amount and variety of activities involved and the amount of teacher supervision required so that appropriate matches can be made to the student's learning patterns. Daily checks on student progress are maintained and on completion of a module the student moves on to the next.

Are teacher supplements used?

The program is massively dependent on the computer which acts as a teacher supplement in the fullest sense. The function of the computer is to relieve the teacher from all clerical duties and to assist in the diagnostic-prescriptive process. The program does not employ computer-assisted instruction, but rather, computer-managed instruction. The student's academic and learning history is recorded. Learning materials and student successes are compared and conclusions drawn which structure future choices. The student's academic program is recorded and recommendations for modifications are made. All tests and test scoring are provided. The computer makes suggestions as to the next module and points out weaknesses in meeting objectives. Daily progress is recorded and reported and progress reports are issued periodically. Finally, the computer performs evaluations on many aspects of the system.

How is student progress assessed?

Student progress is assessed through a variety of devices, all of which are computerized. In general, four outcomes are possible from student assessment procedures; 1) complete, indicating satisfactory completion of a module, 2) teacher certify, indicating that the teacher should make the decision following additional assessment, 3) student review, indicating that certain portions need review before the student moves ahead, and 4) not passed, indicating that the module should be repeated with another TLU.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The program is strongly individualized and requires facilities conducive to this form of education.

Is special equipment needed or suggested?

The special equipment needed is that associated with the computer. These consist of an IBM 2956 optical card reader connected to an IBM 2740 terminal and the necessary telephone components for transmission to the Measurement Research Center in Iowa City, Iowa. These facilities must be located for easy and constant access by the teachers, preferably in the school.

Is in-service training needed or suggested?

Considerable in-service training is necessary to orient teachers to the philosophy of education involved and to familiarize them with the specific components of the program.

What provisions are made for special training of teachers?

In-service training is provided in four phases. Teachers visit and observe PLAN classes in operation for general familiarization during the spring semester. This is followed by a summer reading period covering the concepts and philosophy of the program. A late summer workshop of 4 or 5 days is conducted to train teachers in the use of program components. During the first year of operation, Project PLAN consultants observe the program and work with teachers on areas of difficulty.

What is the cost of implementing the program?

Costs vary depending on local decisions. Recent costs for the implementation of Project PLAN in Atlantic City schools are estimated to be $42 to $50 per student. This amount is in addition to the amount normally expended on the instructional program.

Program Development and Status

How was the program developed?

Project PLAN grew out of the data base provided by Project TALENT, a massive survey conducted for the U.S. Office of Education in 1960. This survey, a battery of tests and questionnaires, was given to 440,000 students in grades 9 through 12 constituting a stratified random sample of secondary schools of all types throughout the United States. The results of this survey pointed strongly to a need for individualization of instruction and a distinct upgrading of counseling services.
The initial development of PLAN was begun in 1966. In September, 1967, a program for grades 1, 5, and 9 was tried out in twelve districts using 2,000 students. Additions to the program were made at a rate of three grades per years. By 1970, about 40,000 students in grades 1 through 12 were studying under PLAN management.

What is the present status of the program?

The program is operational in grades 1 through 12 in the curricular areas of language arts, mathematics, science, and social studies. The input for each student includes state and local requirements, student's ability and wishes, parent's wishes, some 2,500 TLU's, the student's past records, achievement test results, and teacher recommendations. The program is marketed through Westinghouse Learning Corporation and development continues under the auspices of the American Institute of Research.

Program Evaluation

How has the program been evaluated?

Project PLAN has internal components designed to provide evaluation of the system in several areas. The intent of the developers is that the system provide a thorough basis of accountability. Included are evaluations of the accuracy of coordination of students and learning materials, of instructional materials, teachers and tests, and overall evaluation of the effectiveness of the system. New evaluations are used to guide the development of the system, and become outdated when the system is changed to strengthen the weaknesses found.

What are the indicated strengths and weaknesses of the program?

In a management system as comprehensive as Project PLAN, precise quantitative evaluation is difficult since actual achievement depends upon student and teacher variables to a large extent. A broad reading of the observational and evaluation literature on Project PLAN indicates that the system does provide the basis for a systematic and comprehensively planned program of individualized instruction.

Useful Information

Where can the program be obtained?

Information concerning Project PLAN can be obtained form:

Mr. Donald Johnston
PLAN Manager
Westinghouse Learning Corporation
100 Park Avenue
New York, New York 10017

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Project R-3

Summary

Project R-3, located in San Jose, California, is a special program for disadvantaged, underachieving students in grades 7 through 9 designed to improve motivation and achievement in reading and mathematics. Almost three-quarters of the students are from Mexican-American backgrounds. The program was designed in cooperation with the Education Division of Lockheed Missiles and Space Company which developed many of the special materials used in the program.
Students meet daily for three 50-minute periods devoted to reading, math, and a special R-3 activity designed to show the relationships of classroom instruction to the solution of real world problems. The special period makes use of similation and field trips to develop an appreciation of what the world requires in way of academic skills. Evaluation of the program shows achievement gains at slightly better than a month for each month in the program and consistent improvements in attitudes toward school.

Nature of Program

For whom is the program designed?

The program is designed for underachieving, disadvantaged students in grades 7, 8, and 9.

On what rationale was the program designed?

The rationale for developing the program was based on the assumption that traditional curricula and classroom activities have failed to help students of the type included in the target population to achieve to their full capabilities. Therefore, the students quit trying and the typical behavioral symptoms of dropouts and delinquencies become apparent. The program seeks to remedy this by identifying the basic causes of underachievement in fundamental skill areas and then combining school, home, community, and technological resources in an effort to change student behavior.
The title R-3 reflects the rationale of the program: students are *ready* to learn only when they are motivated; motivation is achieved when the performance of an act is made *relevant* to a reward; and major changes are made lasting by *reinforcing* the positive desired acts.

What are the general goals and objectives of the program?

The major goals of the program are:

To develop student/family understanding of the technology-based society of the State of California.
To design a curriculum incorporating occupational skills analysis to make relevant the acquisition of reading and mathematics skills.
To motivate students with the desire to learn by instituting innovative techniques such as gaming/simulation, field trips, team learning, and leadership instruction.
To upgrade performance in reading and mathematics.
To raise student occupational and educational aspiration level.
To improve overall classroom and school social behavior.
To enable students to relate positively individual cultural strengths to school activities.
To enable school staff to acquire understanding of the special characteristics of R-3 pupils.
To provide measures for the student's parents and families to participate in the program.

Organization and Materials

How is the program organized?

Students in the program junior high school spend each morning in three classes taught by project staff and the remainder of the day in the regular school curriculum. The reading and mathematics curricula was organized by the school district and submitted to Lockheed personnel who developed R-3 activities utilizing the skills taught. Program objectives are incorporated into modular units of study occupying given time segments. The contents of each module in the math and reading curricula are developed around a set of specific behavioral objectives. Each segment in the activity period is designed about a core subject of a given cluster of occupations. Each R-3 curriculum unit generally operates for a period of two weeks. Fourteen such segments make up the annual program. Two of the segments, each a week in length and known as high intensity involvement periods, are highly structured field trips to locations distant from the school.

What specific objectives are involved?

Objectives for reading and reading-related activities are organized into categories. Examples of categories and a few of the objectives within the category follow:

1. Students will improve oral communication skills in order to facilitate reading.
1.1 Use accepted pronunciation of spoken words.
1.7 Repeat important facts and relationships after listening to oral presentations of short stories and factual information.

2. Students will improve comprehension of written materials.
2.2 Improve comprehension test scores for mechanically or optically-based reading at a rate greater than students from a similar population not participating in the program.
2.3 Improve comprehension test scores on standardized graded reading materials.

3. Students will improve ability to obtain specific information through reading.
3.1 Use correct procedures for obtaining specific reference books from school or public libraries.
3.4 Discriminate between information presented as fact and information presented as opinion in written materials.

4. Students will utilize several sensory modalities of communication.
4.1 Plan and execute multi-media utilization in real and simulated situations.

4.2 Specify relative strengths and weaknesses of individual media for school communication.

How much student time is devoted to the program?

Project students attend one 50-minute class daily specifically for reading instruction. The total program requires three 50-minute classes daily and two 1-week field trips a year.

What materials are provided for the student?

The project staff did not design the curriculum materials used in reading instruction. Commercial materials are used but sequenced to staff-selected learning events. The materials used during the R-3 activity period were designed by Lockheed personnel expressly for this program.

What materials are provided for the teacher?

Each module has a packet of materials prepared for the teacher which included the following:

1. A list of the general mathematics objectives of the program.

2. A list of the general reading objectives of the program.

3. A list of the specific behavioral objectives to be realized by the completion of the occupational module.

4. Lesson plans for the two-week period.

5. Description of games to be included in specific lessons.

6. Description of relevant field trips to be taken in conjunction with the unit.

7. Evaluation forms for each objective.

How open is the program to supplementary and teacher-made materials?

The program is quite open to additional materials.

What student assessment materials are provided or suggested?

Diagnostic instruments include the *Comprehensive Test of Basic Skills* and the *Spache Diagnostic Reading Scales*. An item analysis of student performance on these instruments is used to develop a profile on each student in the first two weeks of the program. The profile with skills clustered under the areas of comprehension, study skills, vocabulary, and reading habits, is updated periodically on the basis of student progress.

Classroom Activities

How are the classroom organized?

Class sizes are approximately 15 to 20 in the reading and mathematics periods. Thirty students come together for the R-3 activity period which is under the direction of at least two staff members. In the reading classes, 70 per cent of classwork is individualized with the remainder in small groups of from two to seven. The work is focused around the activities of the R-3 component. Classes are heterogeneously grouped and are taught by one teacher and an aide.

How are the materials used?

The program employs an eclectic approach to reading instruction. The language experience approach is used as the basis of most instruction, but phonics, aural/oral, and linguistic procedures are used when warranted. Individualization is facilitated by peer tutoring and the use of teaching machines. Learning contracts utilizing the full range of supplementary materials are developed.

Are teacher supplements used?

A variety of teacher supplements are used. Teacher aides, the majority of whom speak Spanish, assist in instruction. Peer tutoring is employed and a variety of teaching machines allow individualized instruction.

How is the student progress assessed?

Student progress assessment is inherent in the individualized nature of instruction. Student profile sheets are used for record purposes.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The project needs only the classrooms and support facilities common in well-equipped junior high school. However, it is desirable for the project to have special quarters with furniture which promotes team learning.

Is special equipment needed or suggested?

The program makes use of a multi-media approach and must be equipped with a variety of audio-visual aides.

Is in-service training needed or suggested?

Some in-service training is necessary to master the R-3 activity components.

What provisions are made for the special training of teachers?

In-service training is the responsibility of the user. Each member of the project staff spends approximately 50 hours in in-service work a year. Planning sessions are scheduled daily and special sessions are held by project director, evaluator, materials director, and other staff leaders. Each major scheduled event is preceded by a workshop.

What is the cost of implementing the program?

Costs to implement the program would vary depending on local decisions. The per pupil costs for operating the program in San Jose has been approximately $250 to $300 above the usual per student expenditures. Total costs of the program averages approximately $850 to $900 per pupil per year.

Program Development and Status

How was the program developed?

The program was initiated in 1967-68 in cooperation with the Education Division of Lockheed Missiles and Space Company. Originally the program was designed for eighth-grade students only. In 1968 a second group of eighth-graders began the program and the original group continued on to a newly-developed ninth-grade R-3 curriculum. In 1969, new state regulations required that the program be extended to the seventh-grade and to include all students. The program temporarily dropped its eighth and ninth-grade components while accommodating the larger seventh-grade group. The program was then reexpanded to include the two higher grades.

What is the present status of the program?

The program is now operative at the seventh, eighth, and ninth-grade levels. It has been chosen by the Right-to-Read Effort as one of five programs disseminated nationally.

Program Evaluation

How has the program been evaluated?

Program evaluation has been conducted by the staff and in-

dependently by the Rand Corporation, Santa Monica, California. Achievement gains were by pre- and post-testing compared to norms and control groups for some elements. Tests used were the *California Test of Basic Skills* and the *California Achievement Test*. Attitudinal changes were inferred from data on attendance, referrals, and disciplinary action.

What are the indicated strengths and the limitations of the program?

Despite some evaluation difficulties occasioned by changes in state laws, the program has been shown to be successful in improving reading and mathematics achievement scores and in producing positive attitude changes toward school. Each year the gains made by the R-3 students were significantly greater than those of control groups and greater than growth rates reflected by norms.

Useful Information

Where can the program be obtained?

Information concerning the program can be obtained by contacting:

Mr. Leonard Hull
Project Director
555 Dana Avenue
San Jose, California 95110
(408) 287-1111

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Remedial Reading Laboratories

Summary

The Remedial Reading Laboratories in El Paso, Texas were developed to provide remedial instruction to capable children from poverty pockets within the city. Children in grades 4 through 12 attend small group sessions for 50 to 60 minutes daily. The majority of these children are Mexican-American and the reading problems of these are complicated by the language problems associated with non-English speaking homes. The program aims at improving reading achievement, self-confidence, and self-esteem to the levels where the children can profit from regular classroom instruction.

Selection of students is based on objective criteria designed to identify children whose reading achievement is below their intelligence and achievement in other academic areas. Individual diagnosis and prescription of instruction is employed but most instruction is to small groups of about eight. Inservice training and the development of systematic procedures have contributed to the success of the program. Evaluation data collected from a variety of instruments shows that children in the labs make gains in reading achievement beyond those expected of non-disadvantaged children under average conditions. Follow-up studies show the former lab students have improved attitudes toward themselves and school and are more capable of handling grade-level subject matter.

Nature of the Program

For whom is the program designed?

The Remedial Reading Laboratory Program is designed for children in grades 4 through 12 who are reading at levels below what is expected from intelligence and mathematics scores. The children come from poverty areas and over 95 per cent are of Mexican-American backgrounds.

On what rationale was the program designed?

The program offers the following as a statement of its philosophy:

The goal of remedial reading instruction is to guide pupils to achieve their potentials. In this respect remedial scoring is not very different from everyday teaching in any subject area. The primary difference is that instruction in the reading laboratory adheres more consistently to the principle of reaching pupils individually. This becomes an attainable goal because: 1) the pupil-teacher ratio is restricted; 2) materials are varied; and 3) instruction is individualized according to diagnostic indications. In planning remedial instruction the following principles should serve as guidelines:

Effective reading instruction depends on thorough and continual diagnosis of individual proficiencies and deficiencies through both testing and informal analysis.

Instruction is based on the profile of skills revealed by the diagnosis and is adjusted in response to the pupil's progress. Materials are sufficiently difficult to challenge the pupil, but sufficiently easy to ensure his success.

Little or no pressure from teachers and parents is brought to bear on the pupil.

The criterion of skill mastery, rather than pupil's grade placement, governs the substance, pace, and direction of instruction. Individual assistance and personal encouragement are readily available to each pupil.

No teacher is limited to a narrow range of materials or techniques.

What are the general goals and objectives of the program?

The program format has changed considerably over the years as a result of yearly evaluations but major goals have remained the same. These objectives are: 1) to raise the pupil's reading achievement to a level consistent with his reading expectancy so that he can benefit from instruction at his normal academic grade level, and 2) to improve his self-concept, social acceptance, and adjustment to school.

Organization and Materials

How is the program organized?

The program has three major components: special selection of scheduling procedures, provision for systematic instructional planning, and individualized instruction within small groups. Pupil selection is initially by classroom teacher referral. Using a standard form, student achievement in reading is compared to intelligence test and mathematics scores. Students whose reading achievement is considerably below what would be expected from the other measures are referred to the labs for further testing.

Selected students are given individualized diagnostic tests to determine their specific learning problems. Students are grouped according to specific disability or by grade level. Two source books developed by the district are used as a basis for planning instruction. These books provide detailed descriptions of methods suggested for use in organizing programs and in remediating various types of reading problems and index a variety of materials to specific skill teaching areas. The books are designed to insure a uniformly rationalized and implemented program throughout the district while allowing latitude to individual schools and teachers. The program is further reinforced by inservice training.

What specific objectives are involved?

The program endeavors to develop a comprehensive set of skills in each student as indicated through diagnostic procedures. The skills are divided into the four major categories of: 1) vocabulary development, 2) comprehension skills development, 3) study skills development, and 4) fluency and rate development. Skill levels range from readiness techniques to reference skills appropriate to high school.

How much student time is devoted to the program?

Each student selected for the program spends 50 to 60 minutes daily in the reading lab.

What materials are provided for the student?

One management document used by the program is an inventory sheet listing all materials currently on hand for the program. Each teacher orders from their sheet the materials and equipment desired. Materials available include numerous texts,

paperback books for pleasure reading, filmstrips, kits, games, charts, and cards. Laboratories are equipped with numerous audiovisual devices including controlled readers, tachestoscopes, projectors, recorders, etc.

What materials are provided for the teacher?

In systematizing their remedial reading program, the district developed a comprehensive set of materials to aid the teacher in diagnostic-prescriptive instruction. Chief among them are the 197 page manual *A Diagnostic Approach to Remedial Reading* and *The Teacher's Source Book*. The first of these details complete procedures for the remedial program. Survey and diagnostic instruments for the skill areas, suggestions and activities for developing skills, ideas for bulletin boards, instructional aids and forms for a variety of purposes are included. Composite class record sheets for tabulating specific individual deficiencies allow for flexible grouping and regrouping for specific instruction. The record manual is a page-by-page item analyses of instructional materials available correlated with the skills.

How open is the program to supplementary and teacher-made materials?

The program is totally open to teacher-made materials and provides many examples to stimulate additional materials.

What student assessment materials are provided or suggested?

The program uses a variety of published survey and diagnostic instruments. In addition, the manual contains such informal diagnostic devices as graded word lists, graded paragraphs, Cloze tests, phonics skill tests, grapheme-phoneme tests, structural analysis tests, alphabetizing and syllabication tests, and tests of various auditory skills.

Classroom Activities

How are the classrooms organized?

Classes are generally composed of eight or fewer students grouped by skill need. Class sessions make use of frequently changing activities, at least three per session. Students work independently or in small groups.

How are the materials used?

Many specific examples of methodology are systematically outlined in *A Diagnostic Approach to Remedial Reading* and teachers are encouraged to develop their own ideas. Methods are grouped by skill need so the teacher has a ready source of options to follow-up diagnosis. Many of the methods involve game-like situations.

Are teacher supplements used?

The program does not use paraprofessionals, volunteers, or cross-age tutors although such supplements could be useful.

How is student progress assessed?

Classes are kept small enough that student progress assessment is a continuous function of close student-teacher interaction. The teacher has available a variety of formal and informal instruments and the training to use them.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

An adequate room is necessary for each lab.

Is special equipment needed or suggested?

The teacher must have available a variety of equipment and materials.

Is in-service training needed or suggested?

The amount of in-service training depends on the competence of the staff. In-service training is necessary to adopt and understand specific program procedures.

What provision is made for special training of teachers?

The program conducts an extensive program of in-service training. A special 11-room resource and training center at a high school serves as a center for the training. One-way mirrors allow observation of remedial techniques. Training and demonstration sessions on newly field-tested equipment and materials are held. A special library is stocked with over 1400 high-interest, low-vocabulary books. In-service training is planned and regularly scheduled but differs from year to year according to need.

What is the cost of implementing the program?

The cost of implementing the program would depend on many local decisions. Instructional materials are treated as nonexpendable and updating is required every six years. Costs for replicating the program are estimated by the staff as follows:

Grades 4 through 8:	
Initial lab cost	$2,630.00
Prorated for six years	438.00
per pupil cost (50/unit)	8.76
Grades 9 through 12:	
Initial unit cost	$1,460.00
Prorated for six years	243.00
Per pupil cost (50/unit)	4.83

The cost of operating the program averages about $210 per pupil above regular costs.

Program Development and Status

How was the program developed?

The Remedial Reading Laboratories have developed slowly over the years as a result of careful and systematic planning coupled with honest evaluation. Remedial reading classes first began in El Paso schools in 1963 with a one-school, one-teacher summer program. Over the next two years the program spread to a few other schools. With the advent of Title I monies in 1965 the program was expanded vigorously throughout the district. By 1970, twenty-five schools had reading labs and systematic procedures had evolved.

During the first year of the program, evaluation studies showed that hoped-for gains had not materialized. The district undertook a reappraisal of the program and made the necessary commitment. Reading labs were removed from boiler rooms, closets, and auditorium stages and given adequate quarters. A summer workshop of teachers and administrators worked on procedures, techniques and materials. Subsequent evaluations have introduced new changes. One such evaluation found that children do better in small groups than in a one-to-one tutorial setting and the program was systematized to provide for small group instruction. An extensive in-service training program with adequate facilities was developed to train new reading lab teachers and to continuously upgrade the skills of the staff.

What is the state of the present program?

Over the years the program has evolved until it resembles a systems-approach in many of its components, yet it remains firmly founded on the traditional concepts of remedial reading. The program has won a national reputation and is one of five programs selected by the Right-to-Read Effort for national dissemination.

Program Evaluation

How has the program been evaluated?

Evaluation procedures have varied over the years. In general, a pretest-posttest model using standardized reading tests has been used to measure reading achievement gains. Classroom work habits, personal adjustment, and social and academic traits have been measured by a variety of techniques including teachers ratings and follow-up studies.

What are the indicated strengths and limitations of the program?

Evaluation data over the years indicate that children attending the program make gains in reading exceeding those expected from average children in an average classroom. Over 80 per cent of the students have been rated by their teachers as average or above in work habits, personal adaptability, interest, and social habits in the classroom following training in the program. Pre- and post-program ratings by teachers show significant increases in the personal and social attributes. Follow-up studies on students of earlier years show most of the students well-adjusted to school and making average grades in their course work. It was concluded from these studies that a large proportion of the students completing the program retain their ability to cope with grade-level subject matter and have improved attitudes toward self, school, and society.

Useful Information

Where can the program be obtained?

For information concerning the program, contact:

Mrs Edwa Steirnagle
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100 West Rio Grande Avenue
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(915) 533-4951
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Sesame Street

Summary

Few people above the age of three need any introduction to Sesame Street, the immensely popular television program designed to teach readiness concepts to pre-school children at home. The general public, however, may not be aware that the programming of Sesame Street is based on a carefully selected set of behavioral objectives and that the effectiveness of the program in meeting these objectives has been subjected to continuous and elaborate evaluation.

Nature of the program

For whom is the program designed?

The program was designed for 3-, 4-, and 5-year-old children.

On what rationale was the program designed?

The program was developed to provide a pre-school educational readiness experience for children aged 3 through 5 who do not attend nursery school, Head Start programs, and the like. Of the 12 million children aged 3-5 in the United States, over four-fifths of the 3- and 4-year-olds and one-fourth of the 5-year olds do not attend any form of school. Television was chosen to provide this experience since almost every house in the United States has a television set and preschool-aged children are its most faithful viewers. It was felt that while there was ample evidence that children learn through viewing television, no programs at that time were presenting the desired programming.

What are the general goals and objectives of the program?

The general objectives of Sesame Street are to use the media of television to bring to the homes of all children the advantages of preschool training. While the show had to be attractive and entertaining enough to maintain the interest of the target population, the primary goals of the program were educational.

Organization and Materials

How is the program organized?

As part of the extensive evaluation of Sesame Street, Educational Testing Service conducted a content survey of programming. The 130 shows of the first year and the 145 shows of the second year were sampled every 30 seconds to determine what goals were being covered at the time. Table 1 below presents the findings of this study.

What specific objectives are involved?

As can be seen in Table 1 , the specific objectives of Sesame Street changed somewhat from the first to the second year of braodcasting due to modifications of philosophy, experience and the evaluation results of the first year. The specific objectives of the experimental season 1970-71 were as follows:

1. Symbolic Representation

A. *Pre-Reading Goals*

1. *Letters*

a. *Matching*—Given a printed letter the child can select the identical letter from a set of printed letters.

*b. *Recognition*—Given the verbal label for a letter the child can select the appropriate letter from a set of printed letters.

*c. *Labelling*—Given a printed letter the child can provide the verbal label.

d. *Letter Sounds*

1. For sustaining consonants (f,l,m,n,r,s,v), given the printed letter the child can produce that letter's corresponding sound.

2. Given a set of words presented orally all beginning with the same letter sound, the child can select the letter associated with the sound from a set of printed letters.

*e. *Recitation of the Alphabet*—the child can recite the alphabet.

2. *Words*

*a. *Matching*—Given a printed word the child can select an identical word from a set of printed words.

b. *Boundaries of a word*—Given a printed sentence the child can correctly point to each word in the sentence.

c. *Temporal-Sequence/Spatial-Sequence Correspondence* (Words and Sentences are read from left to right).

1. Given a printed word the child can point to the first and last letter.

2. Given a printed sentence the child can point to the first word and the last word.

*d. *Decoding*—Given the first five words on the reading vocabulary list (ran, set, big, mop, fun), the child can decode other related words generated by substitution of a new initial consonant. (ex, given the word "ran" the child can decode "man" and "can").

e. *Word Recognition*—For any of the words on the Sesame Street Word List, the child can recognize the given word when it is presented in a variety of contexts.

*f. *Reading*—The child can read each of the 20 words on the Sesame Street Word List.

1. ran	11. is
2. set	12. love
3. big	13. me
4. mop	14. school
5. fun	15. stop
6. bird	16. street
7. bus	17. telephone
8. danger	18. the
9. exit	19. walk
10. I	20. you

*g. *Spanish-English Vocabulary* (to be determined)

B. *Numbers Goals*

Table 1

The Percent of Time Each Goal was observed in Sesame Street
Year I (130 Shows) Year II (145 Shows)

Goal	Number of Times Goal Observed in Year II	Percent of Time Goal Observed *Year I	Year II	Total for Combined Goals (in Percent)
Letters (General)	16	.8%	.1%	
Recognizing Letters	454	.4	2.7	
Labeling Letters	354	4.9	2.1	Year I: 13.9%
Letter Sounds	154	—	.9	
Sustaining Consonants	25	—	.2	
Sounds of Letters	288	5.5	1.7	Year II: 14.0
Initial Sounds of Words	646	—	3.9	
Alphabet	405	2.3	2.4	
Words (General)	39	—	.2	
Number of words in Sentence	4	—	0	Year I: 0
Letters in Words	3	—	.0	
Words in Sentences	10	—	.1	
Decoding	427	—	2.6	Year II: 4.8
Word Recognition	317	—	1.9	
Numbers (General)		.4		
Recognizing Numbers	258	.0	1.5	
Labeling Numbers	138	1.9	.8	
Reciting Numbers 1-10	435	5.4	2.6	
Reciting Numbers 11-20	115	—	.7	
Reciting Numbers within 1-20	115	—	.7	Year I: 9.9
Defining Subsets	354	2.2	2.1	
Last Number is Total	22	—	.1	
Counting Strategies	85	—	.5	Year II: 10.9
Equality	23	—	.1%	
Conservation	85	—	.5	
Numeral Correspondence	25	—	.2	
Addition & Subtraction	182	—	1.1	
Geometric Forms (General)	13	1.1	.1	Year I: 2.5%
Matching Forms	42	—	.3	
Recognizing Forms	134	.9	.8	
Labeling Forms	163	.5	1.0	Year II: 2.2
Perceptual Discrimination				
Visual Discrimination	11	.8	.1	
Matching Objects	102	—	.6	
Embedded Figures	77	.5	.5	Year I: 4.6
Part/Whole Relationships	201	.4	1.2	
Auditory Discrimination	27	1.0	.2	
Sound Identification	219	—	1.3	
Rhythms	106	—	.6	Year II: 5.2
Rhyming Words	106	.5	.6	
Discrimination of Objects	22	—	.1	

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Table 1 (Continued)

Goal	Number of Times Goal Observed in Year II	Percent of Time Goal Observed Year I	Year II	Total for Combined Goals (in Percent)
Relational Terms				
Same/Different	56	.4	.3	
Size	158	1.5	.9	Year I: 4.9
Quantity	143	.6	.9	
Position	371	1.5	2.2	
Distance	37	.4	.2	Year II: 4.8
Time	56	.5	.3	
Sorting (General)	7	.2%	.0%	
Size	29	.3	.2	Year I: 1.9
Form	58	.5	.3	
Function	66	.5	.4	
Class	19	.4	.1	Year II: 1.2.%
Quantity	27	.0	.2	
Classifying (General)	12	.0	.1	
Size	30	.1	.2	
Form	42	.1	.3	Year I: .7
Function	112	.3	.7	
Class	17	.1	.1	
Quantity	45	.0	.3	Year II: 2.6
Property Identification	63	—	.4	
Multiple Classification	33	—	.2	
Regrouping	42	—	.3	
Reasoning & Problem Solving	113	3.1	.7	
Inferences	61	.0	.4	Year I: 8.6
Antecedent Events	260	.9	1.6	
Consequent Events	215	1.0	1.3	
Generating Solutions	139	—	.8	Year II: 4.8
Evaluating Solutions	6	2.9	.0	
Self				Year I: 7.3
Mind & Its Powers	237	—	1.4	
Body Parts	342	4.0	2.1	
Kinesthetic Participation	27	.3	.2	
Emotions	587	3.0	3.5	Year II: 7.2
Social Units				
Roles & Functions	379	.2%	2.3%	Year I: 3.1%
Groups & Institutions	19	.7	.1	
Family & Home	45	1.5	.3	
Neighborhood	74	.7	.4	Year II: 3.2
City or Town				

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Table 1 (Continued)

Goal	Number of Times Goal Observed in Year II	Percent of Time Goal Observed *Year I	Year II	Total for Combined Goals (in Percent)
Social Interactions (General)	41	.7	.2	
Differing Perspectives	311	.6	1.9	Year I: 2.7
Cooperation	297	1.4	1.8	
Division of Labor	28	—	.2	
Combining Skills	9	—	.1	
Reciprocity	22	—	.1	Year II: 4.8
Conflict Resolution	83	—	.5	
Man Made Environment	33	.4	.2	Year I: 2.5
Machines & Tools	218	1.7	1.3	
Buildings & Structures	24	.4	1.3	Year II: 2.8
Natural Environment				Year I: 10.9
Land, Sky & Water	128	.9	.8	
City & Country	22	.3	.1	
Plants & Animals	827	8.9	5.0	
Natural Processes	132	.7	.8	Year II: 6.7
Entertainment	19.9	20.1		
Limbo	104	1.4	.6	
Other Educational Goals	515	4.9	3.1	
Spanish Vocabulary	183	—	1.1	
Total	16,663		100.0	

*Year I goals not repeated in Year II are not reported here.

1. *Numbers 1-20*

*a. *Matching*—Given a printed numeral the child can select the identical numeral from a set of printed numerals.
*b. *Recognition*—Given the verbal label for a numeral the child can select the appropriate numeral from a set of printed numerals.
*c. *Labelling*—Given a printed numeral the child can provide the verbal label.
*d. *Recitation*
1. The child can recite the numbers from 1 to 20.
*2. Given a starting point under ten the child can count from that number to any given higher number up to ten (ex. count from 3 to 8).

2. *Numerical Operations*
a. *Enumeration*—The child can define a set or subset of up to 10 objects from a larger set.
ex. 1 "Here are some pennies. How many are these?"
ex. 2 "Here are some pennies. Take two."

*1. The child can recognize that the last number reached in counting is the total number in the set: ex. "Count the pennies. How many are there?"
2. The child can make use of counting strategies (ex. when counting objects arranged in a circle the child will identify the first object counted by marking it, moving it or noting a distinguishing characteristic of that object.)
b. *Equality*—The child can perform the appropriate operations needed to balance an equation.
1. *Conservation of Number*—The child can match sets of equal number regardless of configuration (ex. 000 = 0).
*2. *Numeral/Number Correspondence*—The child can assign the correct numeral to sets of differing numbers (ex. 000 goes with the numeral "3").
*c. *Addition & Subtraction*—The child can add or subtract 1 or more objects from any group of less than 10 objects.

C. Geometric Forms (circle, square, triangle, rectangle).

*1. *Labelling*—Given a drawing, cut-out or object in the shape of a circle, square, triangle or rectangle, the child can provide a verbal label for that shape.
*2. *Recognition*—Given the verbal label "circle" "square," "triangle" or "rectangle," the child can select the appropriate drawing, cut-out or object from a set.

II. Cognitive Organization

A. Perceptual Discrimination and Orientation

1. *Visual Discrimination*
a. *Matching*—The child can match a given object or picture to one of a varied set of objects or pictures which is similar in form, size or position.
b. *Recognition of Embedded Figures*—Given a form the child can find its counterpart embedded in a picture or drawing.
*c. *Part/Whole Relationships*—The child can structure parts into a meaningful whole:
1. Given a model and a selection of parts the child can select those parts which are essential to the construction of the model.
2. Given a model and an assortment of its parts, the child can arrange these parts to match the model.

2. *Auditory Discrimination*
a. *Sound Identification*—The child can associate given sounds with familiar objects or animals.
b. *Copying Rhythms*—The child can copy a rhythmic pattern (a by-product of this goal will be the promotion of physical activity on the part of the viewers).
c. *Rhyming Words*—Given two or more words that rhyme, the child can select or supply a third rhyming word.
3. *Subjective/Objective Discrimination*—The child can distinguish between the objective (indisputable) properties of an object and the subjective (judgmental) properties which he ascribes to the object.

*B. *Relational Concepts*—The child can demonstrate his understanding of various relational concepts.
1. *Same/Different*—This concept underlies all of the following relational concept categories.
2. *Size Relationships*—Big/Bigger/Biggest; Small/Smaller/Smallest; Short/Tall.
3. *Quantitative Relationships*—None, Some, More, Most, All, Less.
4. *Positional Relationships*—Under, Over, On, Through, Around, Next To, First, Last, Up, Down, Beginning, End.
5. *Distance Relationships*—Near, Far, Close To, Away from.
6. *Temporal Relationships*—First, Last, Before, After, Next, Beginning, End.

C. *Classification*
*1. *Sorting* (Which of these things is not like the others?) Given a

group of objects several of which have an attribute in common, the child can sort out the inappropriate object on the basis of:

a. size
b. form
c. function
d. class
e. quantity

*2. *Classifying* (which of these things belongs with these?) Given at least two objects that define the basis of grouping, the child can select an additional object or objects that belong in the same group on the basis of:

a. size
b. form
c. function
d. class
e. quantity

3. *Multiple Classification*
*a. *Property Identification*—Given any object the child can name at least two properties of that object. Ex. "The ball is round and red."
*b. *Multiple Class Inclusion and Differentiation*—Given any two objects the child can recognize that they are alike on one dimension and different on another. Ex. "Both of these things are round but one is read and one is blue."
*c. *Multiple Classification and Regrouping*—Given any group of objects the child can:
*1. Classify them on the basis of more than one characteristic. Ex. Given a set of red and blue circles and squares the child can divide the set into 4 subsets:a. red circles b. red squares c. blue circles c. blue squares.
*2. Classify them on the basis of one characteristic (ex. color) and then reclassify the same objects on the basis of another characteristic (ex. shape). (The point will be made that there is often no single right answer.)

III. Reasoning and Problem Solving

A. *Making Inferences*

1. *Inferring Antecedent Events*—The child can suggest events which may have led up to a situation.
2. *Inferring Consequent Events*—The child can predict future outcomes that may result from a situation.

B. *Generating Explanations and Solutions*—Given a familiar problem, the child can provide adequate explanations and solutions to that problem.

C. *Evaluating Explanations and Solutions*—Given several possible explanations or solutions to a problem the child can evaluate these solutions in reality (trail and error) or in his mind (pretesting). When presented with alternative solutions he can select the best one.

IV. The Child and His World

A. *Self*

*1. *The Mind and Its Powers*—The child is aware of his mental powers. He understands that his brain has the capacity to:

a. Pretest Solutions
b. Remember
c. Imagine
d. Plan
e. Guess from progressively revealed cues

2. *Body Parts and Functions*—The child can identify, label and state or recognize the function of such body parts as the:

a. head
b. nose
c. ear
d. eye
e. tongue
f. arm
g. elbow
h. hand
i. finger
j. leg
k. knee
l. foot

*3. *Audience Participation*—The child will respond overtly to those sections of Sesame Street designed to elicit active participation.

4. *Emotions*—The child can recognize and label such emotions as:

a. fear
b. happiness
c. sadness
d. anger
e. surprise
f. pride

B. *Social Units*

1. *Roles and Functions*—Given the name of certain roles in the family and in the community the child can describe appropriate responsibilities associated with those roles. ex. The child can name one or more principal functions of a father, mother, policeman, mailman, farmer, baker, fireman, doctor, dentist, etc.

2. *Social Groups and Institutions*
a. *The Family and the Home*
1. The child recognizes that various types of structures all serve as homes.
2. The child recognizes the family as a unit and can describe several types of family activities.
b. *The Neighborhood*—The child is familiar with the social and physical boundaries of his own neighborhood.
c. *The City or Town*—The child recognizes various structures, spaces, and points of interest which make up the city or town.
ex. 1. The child is familiar with the concepts of a zoo, park, playground, airport, etc. and with stores where various types of common items may be purchased.
ex. 2. The child understands that there are many different cities, that they have finite boundaries, that various goods or products must be transported in and out, and that various modes of transportation are employed.
ex. 3. The child identifies the respective functions of such institutions as the school, post office, and hospital.

C. *Social Interactions*

1. *Differing Perspectives*
a. The child realizes that different individuals or groups may have different relations in similar situations.
b. The child demonstrates that he is aware of and values the feelings, preferences and modes of behavior of other individuals and groups.

2. *Cooperation*—The child recognizes that in certain situations it is beneficial for two or more individuals to work together toward a common goal.
a. *Division of Labor*—When a child is a member of a group that has a common goal, he realizes that the goal will be more easily achieved if each member of the group shares in the work or planning.
b. *Combining of Skills*—When a child is a member of a group that has a common goal, he realizes that the goal will be most easily accomplished if each member of the group contributes his own unique or special skill.
c. *Reciprocity*—The child realizes that in certain situations, in order to accomplish his goal, he must request the assistance of others and in turn assist them in accomplishing their goals.

3. *Conflict Resolution*—The child can provide adequate resolutions to conflict when he is presented with a familiar conflict situation.

D. *The Man-Made Environment*—The child is generally familiar with the form and functions of:

1. Machines and tools.

2. Buildings and other structures.

E. *The Natural Environment*—The child has a general awareness of the characteristics of:

1. Land, sky and water.

2. City and country.

3. Plants and animals.

4. Natural process and cycles.

Program Evaluation

How has the program been evaluated?

Children's Television Workshop began work in the summer of 1968 and from the beginning it was recognized that a major evaluation project would be a necessary component. Educational Testing Service was selected as the evaluator and was involved from the beginning in the developmental aspects of the program. By the time telecasting began in November, 1969, ETS had developed the battery of instruments necessary to test 3- through 5-year-old children on the specific objectives of the program. Over a thousand children in five geographic areas—Boston, suburban Philadelphia, Durham, Phoenix, and northeastern rural California—were tested in the field by ETS personnel. Pretest and posttest parent questionnaires were administered which provided information on the child's home environment and children's viewing behavior were monitored.

The evaluation of the second year of broadcasting sought to build on the first by including followup studies of children from the first years' sample as well as newly-selected samples. While the first year's sample had included broad-ranging samples of all children, the second year's sample was primarily focused on urban, disadvantaged and Spanish-speaking children.

What are the indicated strengths and limitations of the program?

The extensive evaluation programs conducted by ETS resulted in massive amounts of data which can only be briefly overviewed here. The evaluation of the first season of 26 weeks showed that television can be an effective medium for teaching preschool children simple facts and skills concerning letters, numbers, geometric forms, sorting, and classification. All groups studied in this evaluation—inner-city, suburban, and rural—showed significant gains in the objectives measured. Children who watched the most gained the most. Those objectives most emphasized on the program were, with rare exception, the skills best learned.

Within the age categories, 3-year-olds learned the most and 5-year-olds the least. Indeed, 3-year-old children in the highest viewing category exceeded at posttest the attainments of 4- and 5-year-olds from the lowest viewing category. Disadvantaged children in the highest viewing categories, although they showed considerably lower attainment on the pretests, exceeded middle class children in the low viewing category on the posttests. The finding that amount of learning was closely related to amount of viewing held true across age, sex, geographical location, socio-economic status and mental age variables. In addition, those children viewing at home made gains as great as those who watched at school.

The evaluation study of the second year of Sesame Street replicated, in general, the positive findings of the first year but with important differences. In its second year, the Children's Television Workshop was trying to search out the boundaries of program content and broadened its goals considerably. Sixty-three goal areas were included, of which 29 were assessed in the evaluation procedure. For the children who had not viewed the program the previous year, the addition of materials of a more complex nature reduced the impact of the program. These children benefitted from the simpler skills but showed weaker learning of the more complex tasks dealing with letter sounds, initial sounds, decoding, sight words and the like. Children in the follow-up study who had viewed the first year's programming did benefit from the more complex material, however. Of eleven subgoals on which these children showed significant improvement, eight were new or revised from the first year. Differences in most old and simpler goal areas were not significant. Among the new areas showing significant improvement were the children's attitudes toward school and toward the race of others.

One thrust of the second year's evaluation asked teachers to rank the children in their classes on a number of criteria. The teachers involved did not know which of their children were included in the study sample. Study of these rankings showed that children who had watched Sesame Street during its first year were most highly ranked on seven variables including attitudes toward school and race of others. Some evidence for the validity of the rankings can be drawn from the lack of significant differences on the variables, such as physical coordination, where the program would not be expected to have an effect.

Several aspects of the second year evaluation failed because of the difficulty of finding or maintaining adequate control groups—all children were watching the program. Yet the effects which did appear coupled with the first year's evaluation leave little doubt as to the impact of the program. This impact was clear enough, in fact, to raise considerably the concern about the possible impact of other television programs aimed at children.

References

Ball, Samuel, *et al. The First Year of Sesame Street: An Evaluation*. Princeton, N.J.: Educational Testing Service, 1970.

Bogatz, Gerry A., and Ball, Samuel. *The Second Year of Sesame Street. A Continuing Evaluation*. 2 Vols. Princeton, N.J.: Educational Testing Service, 1971.

Sullivan Reading Program

Summary

The Behavioral Research Laboratories' Sullivan Reading Program is a beginning reading program. It teaches decoding through a "linguistic" approach. The uniqueness of the Sullivan materials lies in their programmed format and in the linguistically arranged order in which the letters and words are presented. The materials allow the pupil to work independently and at his own pace.

Nature of the Program

For whom is the program designed?

The program is designed for beginning readers and may be used from kindergarten through ninth grade. It can be used with young children, or it can be used remedially with intermediate and junior high school students. The program has been used with educationally disadvantaged students. With the addition of tapes the program is suited to special education classes and to students learning English as a second language.

On what rationale was the program designed?

The Sullivan materials approach the task of teaching children to read through linguistics and the development of decoding skills, and through a programmed format. The programmed format both stimulates and reinforces the child in his efforts to read. The materials seek to combine and apply basic tenets of learning theory and linguistics. Pupil's responses are immediately corrected if they are wrong, or reinforced if they are right. Students progress through the program at their own rate. Thus the program provides for a variety of learning rates.

Sullivan bases his programmed materials on several assumptions. These are (1) that learning comes from student response, (2) exact and immediate feedback is necessary for efficient learning, and (3) students need to do well from the beginning or they will become discouraged and lose interest.

What are the general goals and objectives of the program?

The materials are sequenced to develop the student's application of sound/symbol relationships. They use a comic book format to lend appeal and are programmed to provide immediate correction and reinforcement to the student. The student proceeds independently and at his own pace to discover the linguistic spelling patterns of written language.

Organization and Materials

How is the program organized?

Information in programmed texts is presented in small, easily mastered steps called "frames." The difficulty of the material progresses very gradually and the order of presentation is carefully logical. In each frame, the pupil is asked to supply an answer to a question or to fill in a blank. As soon as he has responded, he may uncover the correct answer. Correct answers are shown in the answer column which the pupil covers with a "slider" until he is ready to check his own response.

Reviews are presented frequently, and tests are provided for systematic assessment of each student's progress. BRL notes "a steady diet of programmed instruction is not nearly as stimulating for the student as an approach that involves a variety of educational experiences." Therefore the publishers recommend that other activities be generously interspersed with periods of programmed instruction.

What specific objectives are involved?

The student masters basic sound/symbol correspondences, the use of suffixes (-ing, -est, -er, -y), numbers, plurals (-ies), longer word elements and compound words. The first series presents 605 words. The entire program presents 3,464 words.

How much student time is devoted to the program?

A typical reading period might include 20 minutes of work in a programmed text, 15 minutes of reading a story, and 15 minutes of playing a word game.

What materials are provided for the student?

Student materials include a set of 25 programmed textbooks, a set of 84 readers, a set of 45 stories, and a set of progress tests. The Sullivan Reading Program is divided into six numbered series, each corresponding to roughly one school year. Series 1 through 5 consist of four programmed texts. Series 6 consists of 5 programmed texts. "Comprehension Readers" and "Stories" accompany the texts in each series.

Supplementary materials include Sullivan Reading Program tapes for pupils who need special help, *Readiness in Language Arts Program, Enrichment Kit for Readiness in Language Arts*, the *I Can Read* series, *Reading Readiness* which prepares pupils for entry into the Sullivan Reading Program by teaching printed numbers and letters, sound/symbol relationships and a few words, the *Sullivan Decoding Kit* designed specifically for the first grade pupil, and *Comprehension Readers* which broaden pupils reading experience and which contain questions to check pupils understanding.

What materials are provided for the teacher?

A *Teacher's Manual* and a test booklet are provided for each series of the Sullivan Reading Program. A class record book, a *Behavioral Objectives Manual* and a Placement Examination are also available as well as a manual of extra activities.

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How open is the program to supplementary and teacher-made materials?

Programmed texts ar best used with a variety of supplementary activities many of which are provided with the program. The use of other supplementary materials and teacher-made materials is appropriate.

What student assessment materials are provided or suggested?

A Placement Examination gives the student's entry level in the program. Periodic tests are included in the programmed texts to assess student progress. A separate booklet of Progress Tests is included in each programmed series.

Classroom Activities

How are classroom organized?

Classrooms are set up to provide for individualized instruction and small group activities. One of the major characteristics of programmed materials is that they allow the pupil to work independently and at his own pace. The programmed format frees the teacher to work on a one-to-one basis with each student. Instructions to the teacher note that, "No single factor will have a more profound influence on the student's success than the effect of encouragement and reward by his teacher . . . . No program can function with optimum effectiveness, without drawing on the combined energies and resources that derive from the meaningful partnership of teacher and student." To relieve the monotony of such a large amount of individual work, many supplementary activities are necessary to provide variety of activity and the opportunity for children to work in small groups

How are the materials used?

The child experiences continuous success in small, easy tasks. He is reinforced constantly for correct answers, and proceeds easily from known information to new information. Freed from the need to present all new information, the teacher works in a tutorial arrangement with each individual pupil. In his role as tutor, the teacher is there to aid and assist. He monitors the program and provides encouragement and reward to students. Instructions to teachers warn that students' performance cannot be taken for granted.

Are teacher supplements used?

Teacher supplements may be used.

How is student progress assessed?

The teacher is always aware of what sound/symbol relationships pupils are studying. As a result teachers can monitor their success in meeting the objectives simply by observing their progress through the booklets. A more formal means of assessment is provided by the tests included in the programmed texts and the teacher's progress test booklet.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

No special facilities are necessary for the regular program. Listening stations for pupils are helpful where supplementary tapes are used.

Is special equipment needed or suggested?

No special equipment is needed for the basic program. When supplementary tapes are used tape recorders and head sets are needed.

Is in-service training needed or suggested?

Teacher training gives guidance and encouragement to the teacher in his new role of tutor. In-service training is very helpful, but it is not absolutely necessary.

What provisions are made for special training of teachers?

Teacher training is available through "Project READ." Workshops are held at the beginning of the school year. Consultants are available throughout the year.

What provisions are made for training of teacher supplements?

Training of teacher supplements is provided through "Project READ." Consultants are available throughout the year.

What is the cost of implementing the program?

Basic per pupil costs for one series of $22.63 and includes:

4 programmed textbooks
16 comprehension readers
Booklet of 8 progress tests
Teacher's Manual

Additional items for the Sullivan Reading Program include the M.W. Sullivan Stories which correspond to the textbooks and cost $.99 each; the Placement Exam for the entire program ($.49); and the teacher's guide, *Instructional Objectives and Teachers Guide*, which is $4.99.

Program Development and Status

How was the program developed?

M.W. Sullivan was a linguist who had worked with Learning Laboratories. He became interested in programmed instruction through the work of B. F. Skinner. Development of the Sullivan Reading Program began in 1959 as a part of a large grant from the Carnegie Foundation. At the time Sullivan was simultaneously developing many programs in a variety of subject areas. He and his associates were responsible for setting up the programming patterns and the complicated flow of production. Sullivan, himself, did the actual programming and directed programming assistants. Program materials were first tried out on "kids who could get everything right" and then extended to more varied populations. At each stage the program was revised. A "good" program resulted in 19 out of 20 frames eliciting correct responses. Behavioral Research Laboratories were set up in 1961. Working with remedial readers, Sullivan developed the "box" format which proved to be the format for the final version of the Sullivan Reading Program. Development of supplements such as the Sullivan Decoding Kit, the readiness materials and the Comprehension Readers followed.

What is the present status of the program?

Additional materials have been added. Some of these are the tapes for speakers of non-standard English, and manuals outlining the course and suggesting extra activities.

Program Evaluation

How has the program been evaluated?

During 1968-69, the San Francisco Unified School District measured the performance of 1,276 Project READ pupils. Twenty-seven schools participated, 21 of which were located in poverty areas. Pupils were pretested in May, 1968 and posttested in May, 1969 with the *Stanford Achievement Test*. Each child used the materials two or three times a week throughout the year. At the end of a year, 10 of the schools showed one year or more of reading growth. The others showed 8 or 9 months of reading growth. On a district-wide basis, 43 percent of all pupils in grades 3 through 6 made month-for-month gains. A higher proportion, sixty-three percent, of a comparable group of Project READ students made the same month-for-month gains. Before installation of Project READ, these pupils were making less than average gains. The use of Project READ in Kindergarten showed readiness levels of children in-

creasing, with the greatest increase in bilingual and disadvantaged areas.

What are the indicated strengths and weaknesses of the program?

The program materials are built on the insights of linguists and learning theorists. The developers present a new approach to decoding as well as a new approach to teaching. Since these methods are new, teachers must understand and be willing to implement the procedures. They must also be aware of their limitations and be ready to supplement and modify the procedures to suit their classes.

Useful Information

Where can the program be obtained?

The program can be obtained from:

Behavioral Research Laboratories
Ladera Professional Center
P.O. Box 577
Palo Alto, California 94302 (415) 854-4400
For additional information about the program, contact:

BRL/Sullivan Customer Service
69 Fifth Avenue
Suite 16-J
New York, New York 10003
(212) 989-1608

References

Educational Records Bureau. *Final Evaluation Report of Project Read in New York City Schools, Urban Education Grant, New York State Education Department, 1969-1970.* Greenwich, Conn.: Educational Records Bureau, 1971.

Thompson, Lorna J. *The Sullivan Reading Program.* Washington, D.C.: U.S. Office of Education, U.S. Department of Health, Education, and Welfare, 1971.

SWRL
(Southwestern Regional Laboratory)
Beginning Reading Program

Summary

The SWRL First Year Communication Skills Program is designed for kindergarten children. The complete program consists of the Instructional Concepts Program and the Beginning Reading Program. The programs focus on English language communication and beginning reading. Parent-assisted learning and a computer-based management system are used to help kindergarten children develop their oral and written language skills. The program is built on explicit teaching techniques and well defined outcomes. An entry test preceeds the Beginning Reading Program. Criterion Exercises on each of the 10 units allow the teacher to assess each child's progress as part of the continuing program. The SWRL Beginning Reading Program represents a set of methods and materials organized for easy access by the classroom teacher.

Nature of Program

For whom is the program designed?

The SWRL Beginning Reading Program is designed for kindergarten children who are not yet reading.

On what rational was the program designed?

The SWRL Beginning Reading Program is a set of research-based instructional materials and procedures for teachers to use in developing the reading competence of young children.

The program includes student objectives stated in performance terms and measurement techniques developed from the objectives. Word attack skills including the teaching of word elements. Teaching techniques include the use of positive and immediate feedback to the learner, tangible rewards, and use of the modeling principle. The emphasis at all times is on providing success in a non-threatening atmosphere that encourages all children to participate. In creating the SWRL program the developers depended on empirical data and on the self-correcting mechanisms inherent in the "tryout, test, and revise" approach to program development.

What are the general goals and objectives of the program?

Successful participation in the program enables the child to read approximately 100 words by sight, and to master beginning word attack and comprehension skills. In order to further assure that beginning reading will be a pleasant and successful experience for the young child, the materials are visually attractive and call for activities that are presumed to be fun for most children, e.g., playing games or looking at cartoons. The program is designed to maximize the child's active participation in the learning process.

Organization and Materials

How is the program organized?

The program is organized into 10 units. Each unit takes either 2 or 3 weeks with 40 minutes a day devoted to the Beginning Reading Program. Before moving into the next unit the child should have mastered all content from the current unit. By using the Criterion Exercises provided at the end of each unit the teacher can verify whether the children have attained the unit outcomes.

What specific objectives are involved?

The program is designed to teach four specific outcomes. These outcomes concern knowledge of the printed word, and of word elements, word attack skills, and letter naming. Children successfully completing the program will be able to:

1) sight read approximately 100 words

2) identify 23 initial and ending word elements

3) sound out and read any one-syllable word composed of word elements presented in the program

4) name each letter of the alphabet when shown the printed letter in either capital or lower-case form.

The program Outcomes Chart, below, gives the specific outcomes unit by unit.

How much student time is devoted to the program?

Students may devote either 25 minutes or 40 minutes a day to the SWRL Beginning Reading Program. It is up to the teacher to decide which of these time allotments best suits her class.

What materials are provided for the student?

Storybooks, Criterion Exercises, Practice Exercises, Comprehension Sheets and Good Work Badges are provided for the students. Fifty-two 12-14 page illustrated storybooks describe the antics of a group of animal characters and give systematic practice in reading the program words. A Criterion Exercise for each unit allows the teacher to verify the students mastery of the outcomes for the unit. The Practice Exercises provide the opportunity for additional instruction and practice of any of the outcomes the student has not mastered. Good Work Badges are presented to children reaching the 80 percent mastery criterion on the Criterion Exercises. The remaining children receive a Good Work Badge after completing the appropriate exercises. The Comprehension Sheets are used with Units 8, 9, and 10. They provide practice in answering written questions on the content of short paragraphs. The Comprehension Sheets are not tests.

What materials are provided for the teacher?

The program Resource Kit contains a Teacher's Manual, 7 procedure cards, 26 alphabet cards, 116 flash cards, one criterion exercise training pad, 2 oral work index cards, 10 activities and material cards, 10 criterion exercise direction cards, 40 animal cards, 9 entry skill test cards, 12 class record sheets, 180 Good Work Badges and a game index.

Table I

Program Outcomes Chart

Outcome 1: Words that the children learn to read
Outcome 2: Beginning and ending word elements that the children learn to identify
Outcome 3: Word-attack skills that the children learn to apply.
Outcome 4: Letter names, both for capital and lower-case letters, that the children learn to identify when shown the letters

Unit	No. of Weeks			Outcome Number 1 Words	2 Word Elements	3 Word Attack	4 Letter Names
	25 min per day	or	40 min per day				
1	5		3	I Sam see am me Mat	s m at		s m e a i t
2	3		2	Mit Sis meet in it sit on is	it eat		n o h
3	3		2	sat Ann this and Nan a man the	th an n		w f d
4	3		2	mad that at Sid we will with fell mess	ad w ill f		l r b
5	3		2	fit Nat sun them us what feet fun run	un r	By Unit 5 and thereafter, the children should be able to sound out and read any one-syllable word composed of word elements taught previously in the program, Specific words for word-attack instruction are listed in the Activities and Materials Guides.	u c y
6	3		2	Nell who yes did Ed let well need she	ell et l eed		
7	3		2	net ran sad no fill sheet shut mud	ut sh		p k g
8	3		2	sand sell shell fish hat he then nut rat set feel not fat if wet	on h		
9	3		2	fan win hand hill seed weed met hit was to had him man be	b		x z j q v
10	3		2	bat his wish ball bell but has said ant Ben bus had bed bee Bill hid			

How open is the program to supplementary and teacher made materials?

The program recognizes that the teachers' skill is an important addition to the program. The program is open to teacher additions and supplements.

What student assessments materials are provided or suggested?

Entry Behavior Test Cards for the Beginning Reading Program, and Criterion Exercises for each unit are provided. The Criterion Exercises test four kinds of outcomes: Reading words, word elements, word attack and naming letters. Mid-year and end-of-year performance tests fed into SWRL's computer provide system-wide feedback.

Classroom Activities

How are classrooms organized?

In general the SWRL reading program is designed to be used in the self-contained classroom using group instructional methods. The program materials also lend themselves to small-group instruction, team teaching, and individual tutoring. SWRL can be a nucleus for the entire kindergarten program or it may be one of several programs used in the classroom

How are the materials used?

The Activities and Materials Guides are the key to day-to-day activities. The Guides tell what the child should be able to do before instruction, what he should be able to do after instruction, and the instructional materials that are available. The Guides organize the outcomes for a unit into small segments appropriate for a single activity or set of related activities. A sample Activities and Materials Guide follows.

Teaching techniques that provide the student with positive reinforcement and encourage many children to participate are part of the SWRL program. Some of the SWRL procedures are:

"After asking a question—Allow time for all the children to think of an answer before calling upon a specific child by name.
"When calling on children—Call on as many different individuals as possible.
boys as often as girls.
non-volunteers as often as volunteers.
individual children more frequently then groups.
children who are having learning difficulties as often as those who are not.

Table 2

Sample Activities and Materials Guide

UNIT 1

Entry Skills	Skill	Materials
	1. Answer the items on the Entry Behavior Test correctly.	Entry Behavior Test Directions and Record Form Entry Behavior Test Cards *Flashcards 19, 13, 5
Skill 1	2. Say the names of lowercase and capital letters s, m, and e (when shown each letter and asked to say its name). Continue to call attention to both lower case letters and capital letters.	
	3. Read the words I, Sam, and see.	Flashcards 80, 110, 113 *Books 1 and 2 Flashcards 19, 13
	4. **Make the sounds for s and m (when shown each letter and asked to make the sound).	
	5. Say compound words, when given the syllables pronounced separately.	*Oral Word Index (OWI) List 1
	6. Read the word am.	Flashcard 43 Book 3
	7. Say the letter names a, i, and t.	Flashcards 1, 9, 20
	8. Read the word me.	Flashcard 89 Book 4
Skill 5	9. Say two-syllable words, when given the syllables pronounced separately.	OWI List 2
	10. Make the sound for at.	Flashcard 32
Skill 9	11. Say one-syllable words beginning with s and m, when given the sounds pronounced as divided in the Oral Word Index.	OWI List 3
	12. Read the word Mat.	Flashcard 88 Book 5
	13. Follow the directions for completing the Criterion Exercise Training Lesson.	Directions: Criterion Exercise Training Lesson Criterion Exercise Training Lesson Directions: Criterion Exercise 1
Skills 1-13	The Criterion Exercise for Unit 1 should be given when the children have mastered skills 1-13	*Criterion Exercise 1 Class Recording Sheet (for use in recording scores)
	Administer the appropriate Practice Exercise(s) to each child who scores lower than 5 on one or more outcomes on the Unit 1 Criterion Exercise.	Completed Class Record Sheet (to identify children with scores lower than 5 on each outcome) *Practice Exercises 1a, 1b, 1c, 1d

*See the Procedure Cards for these materials in the Program Resource Kit. Be sure to follow the procedures on the card when using materials of this type. (Note that there are two Procedure Cards for Flashcard lessons: one card showing procedures for teaching words, sounds, and letter names, and a second card showing procedures for word-attack, or "sound out and read," lessons.)

**After the children have learned the sound for a new letter, be sure to have them distinguish between the letter name and letter sound by asking in varied order such questions as "What is its name?" and "What is the sound?"

"If the child answers incorrectly or reads a word incorrectly—Without saying anything negative, tell him the correct answer. Then have him read the word or answer the question again."

Are teacher supplements used?

A supplementary peer tutoring program, The Tutorial Program, trains students in grades 4-6 to act as tutors to the children in the Beginning Reading Program. A supplemental Parent-Assisted Learning and the Summer Reading Program stress the involvement of parents in tutoring and reinforcing the learning activities of the children after school. The aim of the Summer Reading Program is to maintain high level performance through the summer.

How is student progress assessed?

Student progress is assessed by administering the Criterion Exercises at the end of each unit. Outcomes students have not mastered are re-taught. Mid-year and end-of-year performance tests provide a computer-based system of evaluative feedback to users including alternative courses of action and guidelines for evaluating program modifications.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

No special facilities are needed for using the SWRL program.

Is special equipment needed or suggested?

While no special equipment is needed for the Beginning Reading Program, a filmstrip projector, a cassette tape recorder, and a 16mm film projector are suggested for teacher training.

Is in-service training needed or suggested?

In-service training is needed.

What provisions are made for special training of teachers?

Ginn and Company provides workshops training for one or two teachers in a district. These teachers train the other teachers in the district. Teacher training kits developed by SWRL may be purchases by school systems.

What provisions are made for training of teacher supplements?

District teachers train teacher supplements.

What is the cost of implementing the program?

Initial per pupil costs for student and teacher materials, based on 30 pupils per class - $7.22
Replacements - per pupil costs based on 30 students - $5.40
Teacher Training Kit (filmstrips, cassettes and print material) - $55.80
A 16mm film is available at an additonal charge.

Program Development and Status

How is the program developed?

During 1966 SWRL designed prototype eight week instructional sequences to result in learner attainment in sight letter discrimination, phonic word attack skills, and comprehension. During 1966-68 revised materials were tried out in the kindergarten classes. During 1968-69 SWPL carried out a full-scale implementation study, involving 2,100 children in 5 urban districts. On the basis of this field testing procedures to teach teaching techniques were augmented and daily assessment of students simplified. Intensive support of the program by HEW made it possible for an estimated 10 percent of the kindergarten classes to install the program in the fall of 1972.

What is the present status of the program?

The Southwest Regional Laboratory views the SWRL Beginning Reading Program as one of many products that will emerge from its R & D process. A comprehensive package for instruction in reading and English language communication skills is planned for the primary grades.

Program Evaluation

How has the program been evaluated?

The Beginning Reading Program was field tested with approximately 120,000 students. The results showed that 80 percent of the students achieved 80 percent on the criterion measures.

A study of SWRL and another kindergarten reading program (Harper and Row) in the Dallas Independent School District attempted a program-fair test comparison: Testers used congruent objectives of the SWRL Beginning Reading Program and the district basal program. The tests concentrated on basic program words, word attack in isolation, word attack on context, and comprehension. On the 30-item SWRL test, SWRL students had a mean score of 87 percent. On the 40-item district program test, the district program classes had a mean score of 58 percent. Scores on the word recognition and comprehension items were comparable. The SWRL children seemed to perform better in word attack then the district program children.

Schools in New Jersey that have had a year's experience with SWRL, such as the Woodbridge Township Schools and Memorial School in Madison Township, intend to use the program another year. Their teachers' overall evaluation of the SWRL program was positive.

What are the indicated strengths and weaknesses of the program?

The SWRL Beginning Reading Program provides systematic reading instruction for young children. The materials provided for the teacher are very well organized. While teachers were dismayed by the amount of record keeping required, they were pleased to see the children picking up books and reading. When the Beginning Reading Program is used as one of several kindergarten programs, teachers should be prepared to augment the program with other language-related activities. Some teachers believed that teacher training should be augmented. The program is virtually without cost to school districts, for use with children who quality for federal funds.

Useful Information

Where can the program be obtained?

Ginn and Company
191 Spring Street
Lexington, Massachusetts 02173
(617) 861-1670

References

Henrie, Samuel M. (ed.) *A Sourcebook of Elementary Curricula Programs and Projects*. San Francisco: Far West Laboratory for Educational Research and Development, 1972.

Jung, Steven, M., Crawford, Jack J., and Daniel W. Kratochvil. "Product Development Report: First Year Communication Skills Program." Technical Report No. 1, Contract No. OEC-0-70-4890, U.S. Department of Health, Education, and Welfare. Palo Alto: American Insitutes for Research in the Behavioral Sciences, 1971.

Southwest Regional Laboratory for Educational Research and Development. *Teachers Manual SWRL Beginning Reading Program*. Lexington, Mass.: Ginn, 1972.

A Systems Approach To Individualized Instruction

Summary

The project designed at the Manzanita Elementary School in Grants Pass, Oregon employed a systems approach to develop a totally individualized and ungraded curriculum in reading, language, and mathematics. Faced by consistently decreasing scores on standardized achievement tests, the district sought to reverse these trends by totally redesigning their program. Three major components were used to organize the new program: A building designed to promote flexibility in instruction, a differentiated staffing plan which created instructional teams, and a curriculum divided into programmed modular units based on skills analysis and performance objectives. A model evaluation design developed by the Northwest Regional Educational Laboratory has produced evidence of a dramatic reversal of this downward trend in achievement and suggests that students of all ability levels are benefitting from the program

Nature of Program

For whom is the program designed?

The program is designed for an elementary school housing approximately 500 students in grades 1-6. All children in the school are included in the program.

On what rational was the program designed?

The primary concern of the project was to reverse a continuing downward trend in the basic skill areas of reading, writing, and mathematics revealed by the testing program given each year. A systems approach was used to incorporate and blend many innovative practices into a single comprehensive program designed to totally individualize the curriculum so that the needs and capacities of each student were met. The program incorporated a building which allows flexible instruction, differential staffing, and systematic instructional procedures which allow students to progress continuously at their own rate.

What are the general goals and objectives of the program?

The general goals of the program are listed as follows:

1. Develop a curriculum which is applicable in terms of the individual needs of children, utilizing individual diagnosis, and instruction based upon this diagnosis.

2. Develop an educational program in the basic skills areas of reading, math, and writing that puts the emphasis on teacher accountability for systematic instruction directed toward preventive instruction.

3. Establish vertical articulation of the curriculum through ungraded activities which provide students with appropriate learning activities based on the diagnosis of the individual student's needs, interests, and learning styles.

4. Develop curriculum materials which are suited to individual use by the child to reach stated behavioral objectives and which provide for student utilization in independent learning, while using his own unique learning style.

5. Provide developmental skills and readiness activities for all students and provision for continuous progress starting at the time of his entry into school.

6. Establish flexible grouping procedures.

7. Establish a differentiated staffing pattern that provides for accountability (*Final Evaluation Report*, 1972, pp. 3-4).

Organization and Materials

How is the program organized?

The program was organized around two major components: instructional teams and a curriculum broken into programmed management units (PMU). Each instructional team consisted of four staff members with differentiated functions. The members were the instructional leader, staff teacher, instructional aide and general aide. The duties and responsibilities of each member differed in type of assignment, degree of accountability and time expended and are detailed in job descriptions. Six such teams comprised the instructional staff of the program.

The *instructional leader* was a certified teacher responsible for planning and directing the instructional program and for the administration of the team members under his control. He was accountable for the achievement of pre-established, specific performance objectives. The *staff teacher*, also a certified teacher, was responsible for the actual implementation of the educational program developed in team planning sessions. The *instructional aide* was directly responsible to the instructional leader and assisted in instruction. They read stories, give directions, answered procedural questions, and assisted in monitoring the children. The duties of the *general aide* were supervisory and clerical. This aide supervised the children during free play and lunches and did general typing and record keeping.

The unit of curricular organization was the PMU. PMU's were developed for sets of related skills and consisted of a pre-post test and materials for at least three associated learning activities. Among the materials incorporated in the PMU were film strips, audio tapes, and consumable paper items, and activities included working with peers, meeting in need groups, and working with a junior high tutor.

What specific objectives are involved?

The reading instruction component of the program was based on a list of 394 sequential skills identified by the staff as essential. For each skill identified and instructional objective was developed and items for pre-and post-testing written. Related Skills and associated objectives were combined to form the 168 PMU's comprising the reading program

How much student time is devoted to the program?

The program covers all of the students' time spent directly on

reading instruction, but the amount may vary between students according to interest and need.

What materials are provided for the student?

Each PMU contains materials or references to material necessary for at least three learning activities associated with the objectives involved. The materials are of a wide variety but typically consist of film strips, audio tapes, consumable paper items, and games.

What materials are provided for the teacher?

In addition to the PMU's, a variety of materials have been developed for general purposes. For example, some 300 paperback books were selected, collected, and graded according to difficulty level. For each book a set of lesson plans were written and multiple sets of questions (some 1800 sets in all) were developed. All materials are catalogued to facilitate planning and retrieval.

How open is the program to supplementary and teacher-made materials?

The program is completely open to additional materials.

What student assessment materials are provided or suggested?

Pre-and post-tests have been developed for each instructional objective and are included in each PMU. In addition, a Master Skills Diagnostic test is available for use in placing students initially in the skills hierarchy. The project also uses a standardized achievement test for periodic evaluations.

Classroom Activities

How are classrooms organized?

The program is totally ungraded and individualized. Students work independently or in flexible groups based on common needs and purposes.

How are the materials used?

Each student was evaluated to determine the skills he lacks and to prepare his skills profile. PMU's corresponding to needed skills were selected for each student. Within each desiganted PMU, the specific set of tasks assigned were selected by the instructional leader or staff teacher. When the student had completed the tasks, he took the post-test. A second post-test was administered five weeks later. Satisfactory completion of the PMU was defined as passing both post-tests at a 90 percent level. If a student failed a post-test, he was recycled through a different set of tasks in the PMU. Upon mastery of a PMU, the student attempted the pre-test of the next designated PMU. All PMU's are ungraded, so that a student might be working simultaneously at different levels in reading, language, and mathematics.

Are teacher supplements used?

A major component of the program is its plan of differentiated staffing. Each team includes two aides with differentiated functions and duties.

Implementation Requirements and Provisions

Are special facilities needed or suggested?

The program requires facilities that promote flexibility of instruction, but such facilities could be developed within most existing school structures. Individual and small group learning stations, areas for larger meetings, open areas, and provisions for materials storage are required. The program tends to be media rich and requires larger numbers of cassette recorders, film strip viewers, and similar equipment than are normally stocked.

Is special equipment needed or suggested?

No special equipment is needed, but differing amounts may be required.

Is in-service training needed or suggested?

In-service training is necessary for most components of the program.

What provisions are made for in-service training?

The project conducts some in-service training workshops in helping districts to replicate the project. Samples of materials are available, on-site visitors are welcomed, and staff from other districts can participate in project workshops. Some workshops have been sponsored in participating districts by project staff. The project was designed and field-tested with ease of exportability in mind.

What is the cost of implementing the program?

The total cost of operating the project elementary school during the two-year developmental period was $495,578, some of which was furnished by Title III funds. Thus, per pupil costs during development were $527 per year. The project estimates that for a school with 470 students and 18 teachers, additional cost beyond the instructional program would not be over $10,000 during development. Once installed, the program costs no more than a conventional program. Per student operational costs at the project elementary school are estimated at $420 per year (for the total school program).

Program Development and Status

How was the program developed?

The program was developed by local staff aided by consultants as a Title III project. Each component was systematically described and a detailed list of project objectives was drawn up. Extensive formative evaluation procedures based on field-testing were employed before any component was implemented. For example, each PMU was submitted to the Project Consultant for review before being field tested. A documented record of the PMU's initial use served as a second screening. The third procedure consisted of the complete record of usage of the PMU. The final evaluation compared performance on the PMU with performance on relevant portions of standardized exams.

What is the present status of the program?

The program is currently being used and developed in the project district and is being implemented at additional schools.

Program Evaluation

How has the program been evaluated?

Responsibility for evaluation of this project was contracted to an outside evaluation group, the Northwest Regional Educational Laboratory. The comprehensive evaluation design developed by this group in conjunction with project personnel has served as a model of evaluation. Each of the major steps of the curriculum development had an evaluation component which was almost entirely conducted by onsite personnel. Included were quality control of curriculum objectives, small-scale pilot tests of curricular units and daily determination of student progress. The procedures used have been described in a separate monograph available from NWREL.

What are the indicated strengths and limitations of the program?

The results of the extensive evaluation procedures show impressively that the project succeeded in reversing the downward

trend of test scores in the basic skills across all subject areas and at all grade levels (except one). Comparisons of students continuing in the project with those who did not continue and those entering the project late favored project students on most comparisons. When project children were compared by initial ability, all ability groups were found to benefit from project instructions. Although the three ability groups maintained their relative positions, it was found that in five of twelve instances the low group achieved the greatest amount of growth and in four of twelve instances the middle ability group gained the most. The absolute levels of attainment are uniformly high for all groups. In almost all instances, average entering scores were at or above grade level.

Useful Information

Where can the program be obtained?

For further information concerning the program, contact:

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For information concerning the evaluation design, write:

Dr. Ed Tyler, Director
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Northwest Regional Educational Laboratory
710 S. W. Second Avenue
Portland, Oregon 97204

References

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